Furniture &cabinetmaking

DESIGN • INSPIRATION • PROJECTS • TECHNIQUES • TESTS • NEWS • EXCELLENCE

A new vice

Why it pays to add saw sharpening to your other 'shop skills

Washed up

Roy Schack comes clean about the soap finish

Restoration tech

Offcentre turning and the back leg conundrum

XXL

Joseph Walsh on free-form laminating

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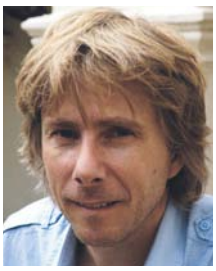


Welcome to...

The zenith of our development

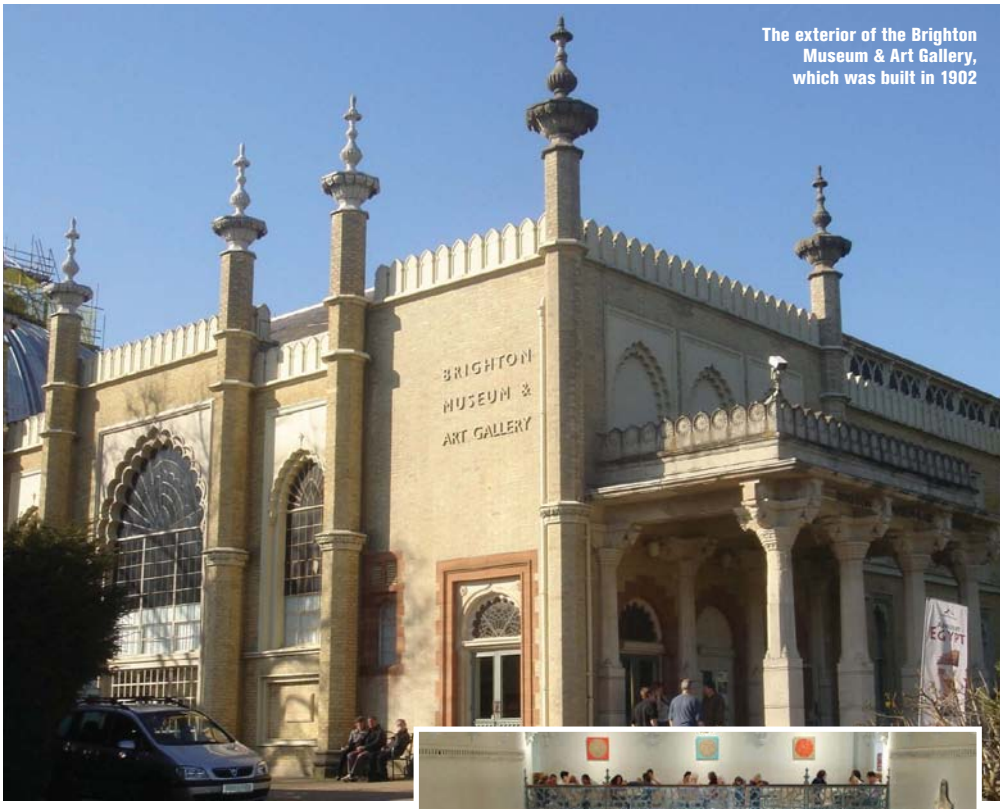
I've been back to one of my favourite haunts this month, where aged 11 or 12, I used to hang out on Saturday mornings. The Brighton Museum & Art Gallery hasn't really changed that much over the years: the furniture exhibits aren't so much bathed in subtle half light as lurking in shadows but are still largely responsible for me considering a future in furniture making. Breuer, Ruhlmann, Aalto, Russell, Mackintosh and Galle were, and still are, heroes of mine though I'm not aware that their work has had any direct influence on my own. I think it had more to do with the fact that I felt I could probably accomplish something similar if I knew how. For a start this furniture looked more like the things we had at home and not a bit like the crusty examples piled up in antique shops all over town. Among the collection there are some pieces that brought about a case of severe sensory overload. In my naivety I perceived them as either trying too hard or just not very tasteful. Not equipped to understand their fussy ways I failed to grasp their meaning, and more to the point, their relevance in our development. There are still plenty of gaps in my knowledge but I'm working on it.

Japanese joints

The Japanese joints that John Bullar is demonstrating this month on page 30 are a good example of how a complex solution is in fact simplicity itself when you understand the basics. His copy each month is one I always look forward to reading. There are some pearls of wisdom in this month's article that, if practised, will enable you to choose and construct better joints. I've already put these principles to work in this month's project to build a saw sharpening vice. Time will tell if I've grasped the basics and if not, well, what I haven't learned will be more valuable than what I have.

3D printing

There are individuals whose work is akin to a tectonic plate in the history of furniture design but most of them we will never know by name. They are the worker bees of the craft world who, for centuries, have figured out all kinds of stuff to enhance our lives. Or have they? Maybe they were just trying to simplify the process of making things for themselves by making the process better? This is certainly true when we consider the different stages of production to make a piece of furniture. Right now we may be at the very zenith of our development with 3D printers capable of generating pretty much anything except of course personal fulfilment, self-worth and pride in our output.



The exterior of the Brighton Museum & Art Gallery, which was built in 1902

PHOTOGRAPH COURTESY OF WIKIPEDIA COMMONS

This museum is devoted to 19th- and 20th-century fashion, style, design and performing arts

PHOTOGRAPH COURTESY OF WWW.COOLPLACES.CO.UK

Soap finish & woodturning

The next article I want you to pay particular attention to comes from Denmark via Brisbane. Our correspondent last month was Roy Schack and he's back with a recipe for a finish that is as old as his aunt and her aunt before that – see page 48.

Last and by no means least is Richard Cooper's account of a recent restoration project centred around the lathe. My favourite description of woodturning came from a shop foreman in charge of a Post Office sorting office. Restrained chaos, he called it. I've never been in a sorting office for real but the ones I have seen on *Blue Peter* looked a bit like that to me as well. After all, who in their right mind would set a chunk of something very hard, spinning very fast in front of them and then jab at it with a metal spike? Fortunately, there are a few in the know, like Richard, who have it all figured out.

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Woodworking is an inherently dangerous pursuit. Readers should not attempt the procedures described herein without seeking training and information on the safe use of tools and machines, and all readers should observe current safety legislation.

Contents

Issue 230 April 2015

Make a sharpening vice with Derek Jones – see page 23
Front cover image by GMC/Derek Jones

Design & Inspiration

Projects & Techniques

36

Your *F&C*

Contribute to these pages by telling us about matters of interest to furniture makers. Call Tegan Foley on 01273 402 839 or email teganf@thegmcgroup.com. Please accompany information with relevant, hi-res images wherever it is possible

News&Events

Arne Jacobsen's iconic 'Series 7' chair

PHOTOGRAPH COURTESY OF WWW.DEZIGNER.COM

Aram Store – Danish Design Month

Aram Store has been championing modern Scandinavian design for over 40 years and this month, they will celebrate longstanding partnerships with five great Danish brands: Carl Hansen & Son, Montana, Fritz Hansen and Fredericia and Louis Poulsen. Throughout March, the store will run activities, workshops, promotions and special offers.

Sign up for an exclusive workshop with Carl Hansen's master craftsman for the opportunity of weaving the seat of a 'Wishbone' chair, and also be in with the chance of winning a special edition centenary chair.

The iconic 'Series 7' chair by Arne Jacobsen is 60 years old and Fritz Hansen is marking the anniversary with a campaign launch featuring new finishes inspired by masculine and feminine qualities.

Louis Poulsen will focus on the timeless designs of Poul Henningsen with a dedicated display. To celebrate the launch of their copper finish 'PH3/2' table lamp in March, they will offer 15% off the original opaline glass version. For more information, see www.aram.co.uk.

PHOTOGRAPH COURTESY OF WWW.MULTIMEDIA-PDL.DK

Poul Henningsen and his stunning lamps

Axminster becomes exclusive agent for Leigh Jigs

Axminster Tools & Machinery has just completed a deal which will give the company exclusive rights to sell Leigh products throughout the UK and Ireland. This new arrangement came into effect at the start of 2015.

Canadian company Leigh Industries, established over 30 years ago, is the most innovative and highest quality manufacturer of dovetail jigs. The Leigh range includes the award-winning D4R Pro, Super Jigs and the new RTJ400 Dovetail Jig. All Leigh jigs come with a five-year warranty.

President of Leigh Industries, Matt Grisley commented: "Making and distributing the world's best router joinery jigs requires commitment, dedication and direct communication with end users. Axminster Tools & Machinery has been providing this to its customers in the UK for over 40 years and we at Leigh look forward to a long and mutually beneficial partnership with them. To be able to have a personal demonstration of Leigh in every store is the perfect way to see why Leigh is number one worldwide."

A demonstration of these machines can be arranged at any Axminster store. Staff have been trained to show just how easy it is to create perfect dovetails. There is also the opportunity for customers to have their routers setup for free when they purchase a Leigh jig. For more information about this and to book in advance, customers are asked to contact their nearest store.

Axminster also offers a one-day introductory course to Leigh Jigs in its Skill Centres in Axminster and Sittingbourne. Dates and further details about the course can be found at www.axminsterskillcentre.co.uk.

PHOTOGRAPH COURTESY OF AXMINSTER TOOLS & MACHINERY

Skill Centre students using Leigh jigs

Line-up announced for Yandles Spring Show

Yandles is pleased to announce the line-up of demonstrators for its forthcoming show on Friday 10 and Saturday 11 April, 2015. The organisers are very pleased to be able to say that Mick Hanbury, Tracy Owen and Mary Ashton will be among the woodturners appearing, alongside Rod Page and new to Yandles, Keith Fenton. This year, you can also see Gary Orange demonstrating chainsaw carving, Loxtonwood Craft demonstrating side axe and adze planking, Lyme Regis boatbuilders showing off their skills and the Japanese Tool Group will once again be demonstrating along with Ben Crowe and his guitar making. As always, there will be an excellent display of stick making, marquetry, woodcarving – this year, Sarah Goss will be taking part – plus furniture restoration and chairmaking alongside displays from Exeter Woodcarvers, West Country Woodcarvers and Martock Woodturners.

The show is now one of Britain's longest running woodworking shows and attracts thousands of visitors from all over the UK and Europe. Taking place in a traditional sawmill, which was founded over 150 years ago, makes the show unique and as you would imagine from a timber company, offers the best selections of timber to be found at a UK-based woodworking show.

Joining the demonstrators will be many of the woodworking industry's manufacturers, including Record Power, BriMarc Tools & Machinery, Robert Sorby and Triton. All will be demonstrating their products and offering special show prices as well.

As always, all timber from Yandles' self-selection centre will be discounted, there will be lots of show bargains and a sale in the Hobby shop, plus demonstrations, a refreshment marquee and the 303 Gallery. There is free entry and parking to the show, which makes it an event not to be missed. For further details, see www.yandles.co.uk.

Dovetailors' limited edition stools

Dovetailors has launched a range of limited edition stools and bar stools, which will form a key part of its 2015 range. The contemporary stools are the first in a new series of designs that will form part of the furniture maker's retail collection. David Wilson, creative director at Dovetailors, said: "This year will see us expand the retail side of the business to run alongside our successful bespoke furniture making operations. We have an exciting collection of designs and we are looking forward to unveiling them to the public in the year ahead."

The stools come in two heights with a light maple *(Acer campestre)* seat contrasting against dark oak *(Quercus spp.)* or walnut *(Juglans spp.)* legs. They are available to buy in the Dovetailors design store at Sunny Bank Mills in Leeds or online at the Dovetailors store on Etsy: www.etsy.com/uk/shop/Dovetailors.

The standard height stools measuring 650mm high × 300mm wide feature oak legs and a maple seat and the bar stools measuring 700mm high × 300mm wide feature walnut legs and a maple seat, all finished in oil. They retail at £390 each. For more information, see www.dovetailors.co.uk.

PHOTOGRAPH COURTESY OF DOVETAILORS

Stars line up for 'Midlands' show

Brought to you by Nelton Exhibitions, the Midlands Woodworking & Power Tool Show, which takes place from 27–28 March, 2015 features a great line-up of demonstrators covering a variety of woodworking disciplines, including Andrew Hall, Jennie Starbuck, Tony Wilson, Reg Slack, Wayne Mack, Michael Painter, Mick Hanbury, Colin Hickman, Nic Westermann, Peter Tree and Peter Sefton.

The 'Midlands' show, as it is otherwise known by attendees and demonstrators alike, takes place at the Newark Showground, Nottingham and promises to be an excellent day out with over 50 trade stands and a tremendous line-up of demonstrators. The 'Midlands' show is not to be missed!

For further information and for ticket details, see the website: www.nelton.co.uk.

TIMBER TRADE NEWS

The large pine weevil

PHOTOGRAPHS COURTESY OF WIKIPEDIA COMMONS

The large pine weevil, *Hylobius abietis*

This weevil, *Hylobius abietis*, is regarded as the most serious insect pest of coniferous trees in Europe. Adults feed on the bark of planted or naturally regenerating seedlings, usually killing them. They typically emerge from pupae in the autumn and hibernate over winter. They mate in the spring and the females lay eggs on or near the roots of freshly cut stumps or weakened trees. Larvae hatch in a few weeks and burrow under the bark of roots, forming galleries and eventually pupating. Adults can live two or three years: the life cycle takes longer at lower temperatures.

Both larvae and adults are damaging, but the adults are more serious because they prevent the establishment and development of seedling trees. Control relies principally on insecticides, but attempts have been made to exploit naturally occurring parasites for biological control. This is difficult, because the weevil is a pest in its native range, so 'classical' biological control, where parasites are introduced from the native range to control a pest in an outbreak area, cannot be used. Instead, parasites must be bred for mass release. There is no direct effect on timber quality, but control measures increase the price of softwoods.

Chris Prior

Kebony used to produce shelving units for NOMA restaurant

Copenhagen's NOMA, universally known as one of the best restaurants in the world, is taking its two Michelin-starred menu to a pop-up restaurant in Tokyo, which opened in January this year. The restaurant is famous for its reinvention and interpretation of Nordic cuisine, which will be infused with a Japanese twist for its month-long stay in Japan. This blend of culture will be complemented by the restaurant's décor, which celebrates traditional craftsmanship techniques.

NOMA Shelving by Wahl&Ross, is made from Norway's Kebony timber and was designed exclusively for the restaurant by Drew Wahlberg Rosskelly, inspired by the beautiful, traditional woodworking tools used for generations by both Danish and Japanese craftsmen. Drew Wahlberg Rosskelly was selected as one of the contributing artists to NOMA Tokyo after the success of the culinary tools and other dining items he has designed for the NOMA restaurant in Copenhagen.

The shelves' strength is derived from the use of rope bracing and tightening techniques rediscovered from the maritime explorers and Vikings of the Nordics, while the timber lashing technique is inspired from historic Japanese craft. The shelves surfaces are made with a durable polymer used in Danish furniture classics, while the timber structure is made of innovative Kebony wood, a modified, high-quality, sustainably grown timber that is impregnated with alcohol and put under pressure and heat to make an extremely durable finish that does not need treatment.

PHOTOGRAPH COURTESY OF THE COMMUNICATION GROUP PLC

NOMA shelving, made using Kebony wood

In the restaurant 12 units are used to store the various culinary tools employed by the restaurant. The finish has been left raw and only lightly sanded so the material grain is celebrated and not polished away. The structure is light and collapsible for transport from Denmark to Tokyo, yet strong once all the elements are bound together. Visit www.kebony.com or www.wahlross.dk for further information.

Barbara Hepworth: Sculpture for a Modern World

Tate Britain will open the first London museum retrospective for five decades of the work of Barbara Hepworth, one of Britain's greatest artists. Barbara Hepworth (1903–75) was a leading figure of the international modern art movement in the 1930s and one of the most successful sculptors in the world during the 1950s and 1960s. This major retrospective opens on 24 June, 2015 and will emphasise Hepworth's often overlooked prominence in the international art world. The exhibition will feature over 70 works by Hepworth from major carvings and bronzes to less-familiar works and those by other artists. It opens with Hepworth's earliest surviving carvings from the 1920s alongside works by predecessors and peers from Jacob Epstein to Henry Moore. The selection reveals how her work related to a wider culture of wood and stone carving between the wars when Hepworth studied at Leeds Art School and at the Royal College of Art.

The exhibition takes place from 24 June–25 October, 2015 and will be open daily from 10am-6pm. Tickets cost £16.30 each or £14.50 for concessions. For more information, see www.tate.org.uk.

PHOTOGRAPH COURTESY OF TATE BRITAIN

Barbara Hepworth, Curved Form (Delphi), 1955

Big Winner at IRWIN's National Tradesman Day

PHOTOGRAPH COURTESY OF BBH PARTNERS LLP

Lucky winner Daniel Bartlett and his brand new Nissan Navara

Contractor, Daniel Bartlett, found that Christmas came early last year after winning a brand new Nissan Navara, worth over £19,000, courtesy of Irwin tools' National Tradesmen Day promotion.

Mr Bartlett purchased an IRWIN Jack saw containing the winning registration code at his local Travis Perkins branch, entitling him to the brand-new car. He collected his prize at the Brackley branch of the store on 23 December and drove home in style.

The Monks Risborough-based contractor said: "I'm amazed and completely shocked at something so unexpected. I couldn't be happier as not only does it help me on my day to day job, it also looks great and I can't wait to take the family for a spin."

IRWIN launched its National Tradesman Day as a way to recognise the hard work of trade professionals around the country. It will be bigger than ever this year with text2win instant prizes and a 'nominate a tradesman' competition where the overall winner will collect a Ford F150 pick-up truck.

Ian Birdsall, Brand Manager EMEA at Irwin, said: "National Tradesman Day is really important to us here at IRWIN. It's a way for us to say thank you to all of the professional tradesmen out there who regularly use IRWIN tools."

For more information on Irwin products, visit www.irwin.co.uk.

Events

PHOTOGRAPH COURTESY OF WWW.MODEMONLINE.COM

A view from last year's Design Shanghai event

Design Shanghai

Design Shanghai is China's leading international design event. In 2014, Design Shanghai opened its doors to over 47,000 visitors, breaking new ground and setting a precedent in China's ever-growing design community.

Showcasing the best design brands from across the globe, Design Shanghai provides a unique and exciting platform to network and establish long-term business relations with China's top architects, interior designers, developers, facilities managers and private buyers. 2015 will see the return of China's premier design event at the stunning Shanghai Exhibition Centre, featuring even more of the finest international design houses. This year's event will welcome an estimated 300 exhibitors and 60,000 visitors are expected to attend the four-day event.

When: 27–30 March, 2015
Where: Shanghai Exhibition Centre
Web: www.designshowshanghai.com

PHOTOGRAPH COURTESY OF WWW.BOSTONDESIGNWEEK.COM

A view from last year's Boston Design Week show

Boston Design Week

The first annual Boston Design Week last year proved to be a major success. The 10-day citywide festival featured over 80 events in every Boston neighbourhood and in numerous suburbs throughout greater Boston. The events attracted an estimated 8,000 participants, with many events sold out. The event seeks to increase public awareness and appreciation of all aspects of design, increase recognition of the vital role design plays in our lives and bring new audiences to a wide array of design industries and organisations.

The vision of the organisers is to encourage the public to explore architecture, environmental and landscape design, urban design, interior design, as well as studio design, such as furniture, decorative arts, sculpture, textiles, jewellery and more.

When: 19–29 March, 2015
Where: Various Boston venues
Web: www.bostondesignweek.com

PHOTOGRAPH COURTESY OF WWW.GUARDIAN.CO.UK

Killer Cabinet Dolls' House 1835–1838, made by Dr. Killer of Manchester

Small Stories: At Home in a Dolls' House

This is your chance to have a poke around somebody else's house and discover tales of marriage, parties, politics and crime – without feeling nosey. At the V&A Museum of Childhood's winter exhibition, 12 dolls' houses from the museum's extensive collection represent changes in architecture and design over the past 300 years and provide an insight into the lives of the characters that inhabit these delicate creations. The houses include country mansions, suburban villas and even high-rise apartments.

When: Until 6 September, 2015
Where: V&A Museum of Childhood, Cambridge Heath Road, London E2 9PA
Web: www.museumofchildhood.org.uk

Sherlock Holmes exhibition

This exhibition at the Museum of London seeks to find out who Holmes is and why Arthur Conan Doyle's late-Victorian detective endures to this day. Exhibits will include a 19th-century portrait of Sir Arthur Conan Doyle, original Holmes manuscripts and the very coat and dressing gown worn by Benedict Cumberbatch in the BBC's *Sherlock*. Many of the paintings, drawings, illustrations and photographs will reveal details of Victorian London, giving a glimpse of the famous landmarks and cultural climate which inspired Conan Doyle's creations. If you're big fans like us here at *F&C*, I'm sure you'll enjoy it!

When: Until 12 April, 2015
Where: Museum of London, 150 London Wall, London EC2Y 5HN
Web: www.museumoflondon.org.uk

PHOTOGRAPH COURTESY OF WWW.DESIGNBOOM.COM

'Pro Chair Family', designed by Konstantin Grcic, 2014 nomination

Designs of the Year 2015

Now in its eighth year, Designs of the Year, held at The Design Museum, celebrates design that promotes or delivers change, enables access, extends design practice or captures the spirit of the year. Each year, the 75 or so projects shown in the exhibition are selected by international design experts from the following categories: Architecture, digital, fashion, product, graphics and transport.

When: 25 March–23 August, 2015
Where: Design Museum, Shad Thames, London SE1 2YD
Web: www.designmuseum.org

The Midlands Woodworking & Power Tool Show

This event is a great day out, full of demonstrations, personalities, trade stands, advice and fun. The line-up has now been announced and features the likes of Peter Sefton, plus a whole host of trade stands.

When: 27–28 March, 2015
Where: Newark Showground, Lincoln Road, Winthorpe, Newark, Nottinghamshire NG24 2NY
Web: www.nelton.co.uk

The Yandles Spring Show

Always a highlight on the woodworking events calendar, thousands of visitors come from across the country to enjoy the informal and friendly atmosphere that is created within the surroundings of this historic timber yard. Expect to see a wide range of demonstrations, trade stands and peruse the extensive array of timber for sale, at discounted show prices.

When: 10–11 April, 2015
Where: Yandle & Son Ltd, Hurst Works, Hurst, Martock, Somerset TA12 6JU
Web: www.yandles.co.uk

F&C UK

An open invitation for furniture makers to let us know what you're up to...

■ SHEFFIELD CITY COLLEGE

Women's Furniture Making Workshop

PHOTOGRAPH COURTESY OF WWW.WESTSKILLS.ORG.UK

The Madskilz group of Seven Hills Women's Institute who had a great time at the Women's Furniture Making Workshop

The Women's Furniture Making Workshop at Sheffield City College has places for courses starting in September.

The workshop has been running for over 20 years and has launched the careers of many successful female joiners, carpenters and furniture makers. Classes are taught by women lecturers and mostly run during school hours.

There is a choice of either studying the course full- or part-time. The full-time courses available give students the opportunity to gain either a City & Guilds Diploma Level 2 Furniture Making or a City & Guilds Diploma Level 3 Furniture Design and Making. The first option involves an introduction to furniture making techniques, starting with a simple project and moving on to more complex pieces as skills develop. This course covers hand skills, wood machining, tool sharpening, timber technology, furniture design, technical drawing and health and safety. The City & Guilds Diploma Level 3 is the next step on from Level 2 Furniture Making and includes practical and theory elements. It focuses on developing practical and design skills to design and make a major piece to showcase learned skills.

In terms of part-time, qualifications to be gained include NCFE Level 1 Furniture Making, NCFE Level 2 Furniture Making, NCFE Level 3 Furniture Making and NCFE Level 1 Joinery/DIY for Women. The Level 1 course is designed for people who are interested in woodwork as a hobby or who want to take up furniture making as a career. Level 2 Furniture Making is a continuation from the previous course but is also suitable for complete beginners who want to attend for more than one term. The Level 3 course builds on the skills learnt and allows the students to make one or more projects of their own design.

■ NATIONAL SCHOOL OF FURNITURE

Bucks New University students put on a great show at Herman Miller National Design Centre

MA Art and Design Practice students and graduates from Buckinghamshire New University have held a public exhibition of their work at the Herman Miller National Design Centre in London.

The show, which included a private viewing before being open to the public, featured a number of creative and original works by students studying Furniture Design, Product Design, Jewellery and Silversmithing and Ceramics.

The exhibition featured a selection of MA graduates' work as well as designs by students from the MA Art and Design Practice course. A competition entitled 'Beautiful Waste' also took place in partnership with Herman Miller, during which students were required to make something beautiful from reclaimed or recycled material.

The winner of the competition, which was judged by visitors from the preview night and Herman Miller staff members, was MA Art and Design Practice student Jason Swain, who created a pair of salad tossers from yellow redundant gas piping.

Speaking of the MA Art and Design Practice competition, Lynn Jones commented: "I was very impressed with all the competition entrants. The results were fantastic, with product designs including lamps, jewellery, buttons and more, all made from waste materials."

MA Art and Design students are also set to receive a series of professional lectures delivered by Herman Miller at the University, entitled 'The Business of Design'. For more information, see www.bucks.ac.uk.

Work by MA Art and Design Practice: Furniture Design student Nour Arabi at the Herman Miller National Design Centre

■ CHIPPENDALE INTERNATIONAL SCHOOL OF FURNITURE

From novice to furniture designer and maker

Until Fiona Thornburn joined the 2014/15 course at the Chippendale International School of Furniture, she had no experience whatsoever in designing or making furniture. Given her novice state, she decided to try something simple but elegant: a console table for her house in Edinburgh. Priority one, given the need for simplicity, was to use a very characterful wood – and she decided on yew (*Taxus baccata*).

Fiona also wanted to incorporate her proposed signature – she liked the idea of a personal motif for her work – a solid steel marble known in Scotland as a 'steelie' floating in clear resin. This required the wood for the tabletop to have a natural knot/flaw going all the way through.

Fiona started by drawing the table in life size and made a miniature balsa wood model, which helped her to visualise and develop the design.

Having chosen the wood for the top, including the through knot, the next step was to make the legs. A piece of solid yew was bandsawn into 7 × 2-3mm layers per leg. A jig was built from MDF so the layers could be glued together and clamped in a curve and cascamite glue was used and the legs were left clamped over a weekend.

The resin with the floating 'steelie' took several attempts, with trial runs taking place in an MDF box: "This was really helpful in estimating the amount of hardener to use," says Fiona. "The challenges with the real thing were to work out how to fill a natural hole in the wood with resin without it leaking over the rest of the table, get the steelie ball in the right place in the resin so it appeared to float, and to accurately judge the amount of resin hardener to use."

The top and legs were sanded to 320 grit, then given three coats of shellac and sanded to 320 again. The resin was then sanded to 12,000 grit using Micromesh.

"Getting the legs even was challenging and involved many visits to the disc sander," Fiona comments. The legs were left around 5-10mm longer than needed to allow for sanding and there were different views on how best to fix the legs to the top, including Dominos, screws and glue. The final decision was to use German pegs and white glue. This was left for 24 hours, after which the peg heads were drilled out and yew plugs glued in to finish off the leg fixing.

Fiona says that making this table has taught her several lessons:

1. First, a full-scale drawing and model were really useful in honing the design, as well as explaining to other students and tutors what she was trying to achieve – and their feedback was invaluable.
2. Second, always measure several times before cutting and allow at least 100mm extra everywhere.
3. Third, think several steps ahead, be meticulous in sanding after shellac, use good light and have a keen eye to spot rogue clamp marks! Better still always use scrap wood between the clamp and actual piece.
4. Fourth, prepare thoroughly – for example, ensure a completely level work surface and that everything you need, such as clamps, are close to hand and in working order.

PHOTOGRAPH COURTESY OF FIONA THORNBURN

Fiona Thornburn and her completed console table in yew

Finally, be brave and try things you've never done: "I'm now the proud owner of a beautiful table that everyone wants to touch and feel how smooth the resin and wood are! Big thanks to the other students and to tutors Anselm, Mattie, Graham and Alan for their help and advice," she says. For more information, see www.chippendaleschool.com.

■ PARKSIDE COMMUNITY COLLEGE

Working with wood

Tucked away in a workshop in Cambridge on a Tuesday evening you can find members of a woodwork evening class sawing, polishing, carving and sanding. The class takes place at Parkside Community College and the tutor, Paul Waldmann teaches for 15 hours a week: to children in after-school clubs, at evening classes and at morning workshops. When he's not helping others to create or restore 'works of art' he's very busy making ones of his own.

Paul's classes are mainly project based and are completely unstructured, which allows students to work on ideas and projects of their own rather than having to follow a set course. At each class, you can expect to see a variety of items being made, including for example, a lockable cabinet, a slatted bread board with crumb catcher and a walnut *(Juglans spp.)* chest.

Finding suitable wood can be a bit of a problem and Paul recommends using hardwood for making really nice, professional-looking furniture. This is because it's more dense and will give a finer, smoother finish.

Luckily Paul has a number of contacts who can supply hardwood, although he also suggests trying local joiners to see if they have any. Although the classes are unstructured, there is the opportunity for students to gather round to watch Paul demonstrate or explain something, such as techniques for using a router. The college also has a multitude of tools, which students can use, although you can also bring your own if you wish.

For more information, contact Paul Waldmann on 01223 314 001 or visit his website: www.paulwaldmanndesign.co.uk.

PHOTOGRAPHS COURTESY OF PAUL WALDMANN

Aside from restoring old furniture, new projects can be undertaken on the course

If you're a member of a collective and would like to raise your profile then submit a story to teganf@thegmcgroup.com

PHOTOGRAPHY: MIC/DEREK JONES

Editor's round-up...

Having trouble sourcing the right tool for the job? Derek Jones sets about identifying the essential tools and equipment on offer this month ***All sterling prices include VAT, correct at time of going to press***

Whether you're an aspiring cabinetmaker or general woodworker, there are certain rites of passage that are the building blocks of our development. We've all heard of the apprentice piece – typically a scaled down version of a piece of furniture to demonstrate the accomplishments of the maker. I doubt if many of these were ever intended to be assessment pieces; it's more likely they served as a portfolio for the newly qualified craftsman. Nowadays, we just snap a photo and chuck it up on the web and sit back while the 'likes' pour in. Don't get me wrong, I'm not knocking the habit – I like the immediacy and convenience that this has over humping stuff around the countryside to pitch for a job. I remember once taking a small crate containing a model across London on public transport to meet with a prospective client. It came to nothing, which was disappointing, but I was more upset about the waste of time and effort it took to achieve that result. You might say it was just another rite of passage.

Fortunately, there are other ways to test our mettle and share the experience. I had the pleasure of talking with Neil Cronk this month – see the review of his website on page 73 – and almost immediately set about making a Benjamin Seaton square. Neil makes these and other layout tools for sale and like anyone who gets into batch work, has perfected the art. A wooden square that's reliable that you've made yourself is quite a challenge. Making them for other woodworkers is quite a different thing. Neil Cronk has earned his stripes. You could say that about the mixed bag of tools and equipment we've chosen for you this month, but I don't recommend trying to make them yourself.

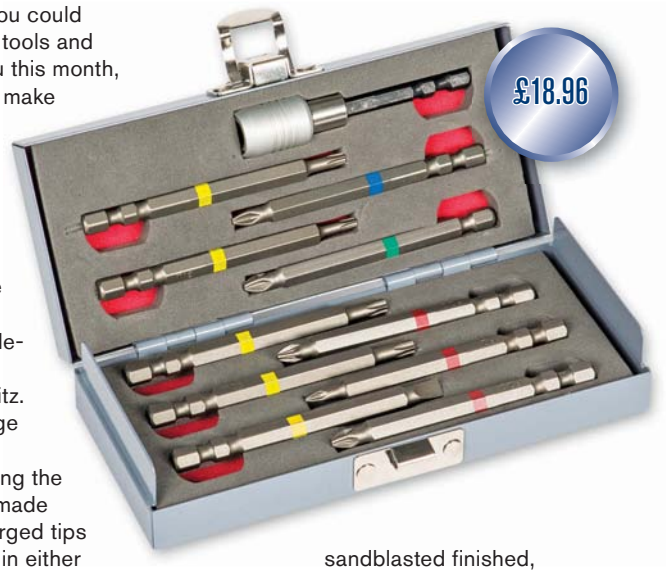
Axminster Trade Bitz

If you're fed up with poor quality bits that wear out after very little use, then Axminster Tools & Machinery may have the answer. The company has just introduced its own range of trade-rated hex shank bits under the brand name, Axminster Trade Bitz.

The Axminster Trade Bitz range fulfils the need for a well made accessory that will take everything the trade demands. These bits are made from S2 steel with accurately forged tips for fit and strength and finished in either wear-resistant TiN or sandblasted.

Most cordless drills and screwdrivers have a keyless chuck and some only have a hex fitting. The range of hex shank bits and holders is constantly increasing. The shanks of the Axminster Trade Bitz holders, long screwdriver bits and torsion screwdriver bits are universal. The shanks have a double groove and special machining makes them compatible with all makes of 6mm hex quick-change and magnetic bit holders.

Various sets are available: the 11-piece set comprises an 85mm quick-release bit holder with a universal shank and 10 sandblasted finished, colour-coded bits. The 28 piece set is a high-quality, trade-rated bit set and comprises a universal shank magnetic bit holder and an assortment of 27 colour-coded bits. There is also a very useful 28-piece mixed set of TiN coated screwdriver bits, which contains two universal shank magnetic double groove bit holders – locking and non-locking – and 26 colour-coded bits. All three sets come in a robust steel storage case lined with industrial foam to prevent the bits rolling around. The bits are also available individually. Please note that prices are valid until 31 December, 2015.



Dremel powers up for 2015

Dremel kicks off the new year with a raft of new and improved initiatives to help its users power on with their projects in 2015. The first is the Dremel 8200-20 cordless. This kit contains a Dremel 8200 high performance cordless multitool, two 10.8V Li-ion 2.0Ah batteries, a 30-minute charger, 20 Dremel cutting, grinding, sanding and polishing accessories, including Dremel EZ SpeedClic, all packed into a Dremel soft bag.

Dremel is also launching a new seven-piece DSM20 Compact Saw Accessory Cutting Set, a new seven piece Multipurpose Router Bit Set and three new Multipurpose and EZ SpeedClic accessory sets. The DSM20 Compact Saw Accessory Cutting Set comprises seven high-quality accessories: a SM500 multipurpose carbide cutting disc, two SM510 metal and plastic cutting wheels, two SM520 masonry cutting wheels, a SM540 diamond abrasive wheel and a SM600 multipurpose carbide flush cut blade.

The Dremel Multipurpose Router Bit Set contains all seven of Dremel's high-quality router bits, helping users to perform a broad range of routing applications from edge, corner, straight, keyhole, word and letter routing in veneered woods, fibreboard, chipboard, laminates, plywood, softwood, hardwood, rubber, plastic, plexiglass and carbon.

The three new Dremel Multipurpose and EZ SpeedClic accessory sets are targeted at DIYers, hobbyists and crafters aimed at helping them to complete a vast array of detailed tasks. However, it's cutting, grinding, sharpening and polishing of some edge tools that we think the Dremel has the greatest appeal to woodworkers. We've yet to find an easier method of dealing with moulding plane irons.

Triton's T20 range

The Triton T20 range delivers three professional drilling and driving options from a high performance Lithium-ion power pack system. The Triton T20 professional cordless system maximises the power advantage and long term performance of the Samsung Lithium-ion power cells through a precision engineered gear box. Super-fast recharge rates and electronic control enable the power-matched Mabuchi motors and sintered steel metal gears to deliver unique levels of combined speed and torque, precisely where and when they're required.

The range consists of a multi-speed drill driver, combi drill driver with hammer action and a high-performance impact driver, which delivers 160Nm of sustained torque and 3,300 impacts per minute.

All three products in the range feature 20V, 4Ah battery packs consisting of Samsung Lithium-ion power cells with Intelligent Charging, ensuring a longer battery life and greater power delivery. Fast charging to 80% capacity is achieved in just 30 minutes. An over-moulded grip made from natural rubber compounds ensures maximum comfort and control, combined with a lightweight design to reduce fatigue during prolonged use and there is also a handy built-in LED work light.

Stainless steel ruler – right to left – metric/imperial

This stainless steel ruler, available from Buy Brand Tools, is made to EC Class II accuracy and is designed so it can be read from right to left. It is graduated on the top edge in 0.5mm and 1mm and figured in cm. It is also graduated on the bottom edge in 16ths, 32nds and 64ths, figured in inches. This single sided ruler is made in Germany by Vogel – one of the world's leading manufacturers of top quality stainless steel rulers. This product is made from stainless steel – grade 4310 – with a satin finish and is available in a number of different lengths: 300mm/12in, 1m/39in, 1.5m/59in, 2m/79in, 3m/118in and 4m/158in. 1.5m and 2m rulers are also available with 40mm width and 2mm thickness.

IRWIN Tools' new Impact Performance Series

IRWIN Tools has just launched its Impact Performance Series – a new portfolio of impact driver accessories.

The Impact range is primarily for screwdriving and it includes the launch of various products – impact single and double-ended bits, quick-change extensions and the right angle drill. There are also 10 differently configured Pocket and Pro Set Cases. And, unlike many screwdriver bits on the market, IRWIN's Impact accessories are engineered specifically for use in impact tools.

The single and double-ended bits are manufactured with heavy-duty, high-grade steel and designed with precision tip geometry. They deliver superior fitment, reduced strip and cam-out and are able to withstand high torque outputs.

The Impact Performance Series magnetic screw-hold attachment ensures less slipping and wobbling and IRWIN's single and double-ended power bits are compatible with the new magnetic screw-hold attachment.

The IRWIN Impact right angle drill also offers a full line of extensions. The quick-change extension and a right angle drill/drive tool are perfect for those difficult to reach places. It has a low profile right angle attachment, a steel gear and ball-bearing drive for smooth drilling and long life, a moulded handle for a secure and comfortable grip and metal housing for increased durability.

The Impact pro-set and pocket cases are made from moulded ABS Resin, which allows them to be able to hold up to the rigours of daily use. They are convenient, simple to use, compact and portable. The larger Impact pro-set includes a full-length metal pin in the hinge for added durability.

Rockler router table spline jig

Rockler's router table spline jig is a device that attaches to a router table to create decorative splines for mitred box and frame joints. The splines also provide extra strength in the joint. The jig consists of two main parts: the base, which attaches to the router table and the sled, which holds the workpiece at a 45° angle to the router bit. The sled slides in the tracks of the base to guide the spline cuts. The resulting spline cuts allow users to add their own key stock to create beautifully adorned joints. The jig specialises in small boxes and frames, while the recently introduced large box spline jig – see *F&C* 229 – utilises hand-held routing to cut splines for large boxes and chests that are too large for a router table to handle.

The product consists of a high-pressure laminate base, which attaches to the router table with a pair of mitre bars and five-star knobs, plus a durable plastic sled, which cradles the mitre joint and slides in the channels of the base to guide centred spline cuts through the joint. The jig is capable of accommodating frames with a standard 280 × 355mm opening or boxes measuring up to 305 × 305 x 305mm. Two adjustable fences sandwich the workpiece for extra stability during cutting. A centring tool is included, which aligns the jig with the centre of the router bit and attaches to the jig for storage when not in use.

Lee Valley Register Calliper

Inspired by an antique tool included in the famous H.O. Studley tool chest, this calliper is ideal for quickly checking dimensions. The direct-reading scale lets you measure objects or set the mouth opening without reference to a ruler. It is marked for both inside and outside measurements up to 45mm, graduated in 16th of an inch and all markings are laser engraved for accuracy. A brass thumbscrew lets you lock the opening for comparative measurements, which is useful for checking for size when thicknessing boards with a hand plane or turning tenons on a lathe. The curved legs are made from hardened and tempered stainless steel and the pivot is made of brass. It is conveniently sized at 75mm long.

Auriou Chris Pye basic woodcarving tools

Chris Pye has been working with Auriou on a redesign of their woodcarving tools since 2009. The new gouges have the older, 'allongee' style of blade that splays from the shoulder: they are lighter to use, the corners are more available for cutting and their thin walls are of a uniform thickness. These tools correspond to Chris' teaching and the recommendations in his books. Each tool has an octagonal ash *(Fraxinus excelsior)* handle with brass ferrule, as redesigned by Chris to fit comfortably into your hand. These tools can be bought individually or in sets of seven or 11. The 11 tool set includes three almost flat, three medium and three deep gouges, a skew chisel and a 'V' tool.

Seaton Square

Available from The Cronkwright Woodshop, the Seaton Square is a faithful replica of Benjamin Seaton's layout squares, which he made from mahogany *(Khaya ivorensis)*. For those of you who don't know the story, on 15 December, 1796 at the age of 21, Benjamin Seaton was given the gift of a chest's worth of tools by his father Joseph Seaton. The majority of these tools came from Christopher Gabriel & Sons, one of the most prominent planemakers in London at the time. Starting on 1 January, 1797 Benjamin starting building a beautiful chest with the tools purchased for him, finishing it on 15 April, 1797. During the same time period he built himself a set of three layout squares made from mahogany.

With the help of the diagrams in *The Tool Chest of Benjamin Seaton, Second Edition*, Neil Cronkwright has faithfully made a replica of the smaller versions of these three squares. Each features a hand tapered blade, twin tenons and crisp hand-planed chamfers, made out of genuine mahogany. The square is lightweight, accurate and wonderfully hand crafted. It would make a great addition to any woodworker's tool collection.

Crotch mahogany veneer

Now available from Oakwood Veneer in over 300 sizes is crotch mahogany, which is unique among wood veneer species as, in the majority of cases, it requires only small rectangular pieces rather than full 4 × 8 sheets. For this reason, Oakwood Veneer has amassed a large selection of sizes, ranging from 255 × 355mm to 815 × 1,981mm as well as full 1,200 × 2,438mm sheets. Each size has as many as 24 matching veneer pieces, offering an excellent method of buying exactly what is necessary for the specific job. Some other companies sell smaller rectangles of crotch mahogany, but generally they are offering "raw veneer, rather than backed pieces," said Peter Rodgers, Oakwood Veneer company president. Oakwood's standard backing for crotch mahogany is 22.2mm double-paper, which they call Bubble-Free Veneer or BFV. "Our Bubble Free stock is far easier to install without having to worry about cracking, bubbling, or other installation issues," Peter said.

Oakwood Veneer hopes that their larger selection of crotch mahogany sizes will help to make easier purchases for high-end furniture makers and cabinet installers. Whether someone is interested in one small piece or over 20, they can provide them with the crotch mahogany they need without paying for wasted material. For more information about crotch mahogany as well as a large selection of domestic, exotic, and burl veneer and edgebanding, visit www.oakwoodveneer.com. F&C

Contacts

Auriou Chris Pye basic woodcarving tools
Contact: Classic Hand Tools
Tel: 01473 784 983
Web: www.classichandtools.com

Axminster Trade Bitz
Contact: Axminster Tools & Machinery
Tel: 03332 406 406
Web: www.axminster.co.uk

Crotch mahogany veneer
Contact: Oakwood Veneer
Tel: (001) 800 426 6018
Web: www.oakwoodveneer.com

Dremel powers up for 2015
Contact: Dremel
Tel: 08447 360 109
Web: www.dremeleurope.com

IRWIN Tools' new Impact Performance Series
Contact: IRWIN Tools
Tel: 01543 447 001
Web: www.irwin.co.uk

Lee Valley Register Calliper
Contact: Lee Valley Tools
Tel: (001) 800 871 8158
Web: www.leevalley.com

Rockler router table spline jig
Contact: Rockler Woodworking and Hardware
Tel: (001) 800 279 4441
Web: www.rockler.com

Seaton Square
Contact: The Cronkwright Woodshop
Email: neil@cronkwrightwoodshop.com
Web: www.cronkwrightwoodshop.com

Stainless steel ruler – right to left – metric/imperial
Contact: Buy Brand Tools
Tel: 01142 513 535
Web: www.buybrandtools.com

Triton's T20 range
Contact: Triton Tools
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- 225mm x 160mm table, tilts 0-90°
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*Moulded base

INCLUDES LEFT & RIGHT TABLE EXTENSION

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CTS10D	1500w	254mm	£149.98	£179.98

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CL CBS250	Floor	370w	245mm	£179.98	£215.98

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CEP1

MODEL	INPUT POWER	DEPTH OF CUT	EX.VAT	INC.VAT
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Einhell RT - PL82 ‡	850W	3mm	£49.98	£59.98
B&D KW750K - GB	750W	2mm	£57.99	£69.59

‡ was £65.99 inc.VAT

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* SS = Stainless Steel

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*Black & Decker

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MODEL	MOTOR	EXC.VAT	INC.VAT
CPF13	400w/230v	£44.99	£53.99
KA900E*‡	350w/230v	£49.98	£59.98

‡ was £63.59 inc.VAT

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- Rugged fan heaters for small to medium sized premises
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Devil 6003‡	1.5-3kW	£49.98	£59.95
Devil 6005	2.5-5kW	£74.99	£89.99
Devil 6009	4.5-9kW	£129.98	£155.98
Devil 6015	5-10-15kW	£189.98	£227.87

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- Powerful, bench mounted disc sander
- 900W
- No load disc speed: 1490rpm
- 305mm Disc Diameter (1 x 60 grit sanding disc included)
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CONVERT 230V 1PH TO 400V 3PH

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MODEL	MAX. MOTOR HP	FUSE	EX VAT	INC VAT
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PC40	3.5Hp	20amps	£269.00	£322.80
PC60	5.5Hp	32amps	£319.00	£382.80

Clarke JIGSAWS

CJS380

BOSCH Power Tools

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MODEL	POWER (W)	DEPTH OF CUT (WOOD/STEEL)	EX VAT	INC VAT
Clarke CJS380*	420w	55/6mm	£12.99	£15.59
Clarke CON750#	750w	80/10mm	£24.99	£29.99
B & D KS600*	450w	60/5mm	£29.98	£35.98
Bosch PST700*	500w	70/4mm	£49.98	£59.98

Clarke QUICK RELEASE ALUMINIUM SASH CRAMPS

LIGHTWEIGHT ALUMINIUM

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MODEL	SIZE	EX. VAT	INC. VAT
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Bosch PSR18	18v	1	£49.98	£59.98

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CDP151B	300/5	£106.99	£128.39
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CDP451F	510/16	£239.98	£287.98
CDP501F	980/12	£429.00	£514.80

B=Bench mounted
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Clarke CONTRACTOR BELT SANDERS

Clarke

- Ideal for surface removal, sanding and finishing

Makita

ABRASIVE SANDING BELTS IN STOCK

BS1

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MODEL	WATT	M/MIN	EX VAT	INC VAT
Clarke BS1	900w	380	£29.98	£35.98
Clarke CBS2	1200w	480	£69.98	£83.98
Makita 9911	650w	75-270	£94.99	£113.99

Clarke SHEET SANDERS

CON300

FROM ONLY £12.99 EX.VAT £15.59 INC.VAT

*110V in stock

MODEL	SHEET SIZE	MOTOR	EX VAT	INC VAT
COS200	190X90mm	150w	£12.99	£15.59
CON300	230X115mm	330w	£29.98	£35.98
Makita BO455*	112X102mm	200w	£54.99	£65.99

Clarke DRILL BIT SHARPENER CBS16

- Great for 3mm to 10mm HSS drill bits
- 70W motor
- Drill bit guide ensures sharpening at the correct angle
- Saves cost of new drills

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150 KG PER SHELF (evenly distributed) Strong 9mm fibreboard shelves

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- Ideal for DIY & Hobby use
- Dual purpose, for both finishing & sizing of timber (CP-6 planer only)

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CPT600	1250w	120mm	£169.98	£203.98
CPT800	1250w	120mm	£189.98	£227.98
CPT1000 NEW	1500w	120mm	£269.98	£323.98

Clarke WOODWORKING LATHES

CWL1000

3 PCE CHISEL SET INCLUDED WITH CWL1000

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MODEL	CENTRE TO CENTRE (mm)	TURNING CAP.	TURNING SPEEDS	EX VAT	INC VAT
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CWL12D	940	305mm	5	£189.98	£227.98

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23228(LH)

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- Accurately creates deep square recesses
- Table size 150 x 340mm
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In the workshop with Graham Rayner

PHOTOGRAPHS BY ROY TOMPKINS

We meet bespoke furniture maker Graham Rayner and find out more about his design process

From his workshop in Royston, Hertfordshire, Graham designs and makes high-quality bespoke furniture to commission. He is a 'life-long woodworker' who strives to create 'heirloom' pieces that will be enjoyed by generations of owners.

Background

Graham says that he is 'addicted' to making things: "I have done it all my life and I am sure I couldn't stop if I tried!" This 'addiction' can be traced back to the toy tool set he received for his fourth birthday, a gift that caused initial excitement as he rushed to his dad's shed, but he was 'bitterly disappointed' when the tools didn't actually work. The following Christmas this budding furniture maker received a small set of 'real' tools in a box that his father had made. This was a much more successful gift: "I was allowed to use them, with supervision at first, but I still have the box and many of the tools that it contained. I still use some of them even now," he tells us.

Like many other furniture makers, Graham's working life started with an apprenticeship in engineering: "I worked for a company that made precision machine tools for the manufacture of aircraft engines. Unfortunately the company struggled in the economic climate of the mid-1980s and, though I loved the job, I left to pursue a more secure career in project management," he explains. However, a change in his home situation led him to look again at his stressful project management job and his responsibilities as a parent to two young daughters; this ultimately led to his decision to 'go back to the tools'. "I started out in self-employment as a jobbing carpenter in 2003; carpentry quickly became joinery, and fine furniture soon followed. My working life started in precision engineering, and I now very much enjoy the precision work that fine furniture making requires," he says.

This change in career also brought him greater job satisfaction: "I clearly recall as an engineering apprentice, watching 'the box' go out of the door and proudly thinking 'we made that!' I missed that in my project management roles, and it was an important driver in my decision to return to the tools. Now 'the box' contains furniture that I have designed and made myself, and I still stand back and am proud of the furniture that I make."

Favourite pieces

Graham says that it's often the pieces that have thrown up challenges that have been difficult to resolve but which have ultimately turned out well that have given him the most satisfaction. There are some 'landmark' pieces that have extended the scope and changed the direction of his making and that have stretched his knowledge and skills. A good example of this is a watch case he made with polished chrome corner pillars, using different combinations of materials and construction methods to those that he had used previously. "The corner jointing of a conventional box is removed entirely with the chrome-plated corner posts forming the corner joints; they also support the box lid in the open position. The high contrast, high gloss look of the French-polished rosewood *(Dalbergia retusa)* and the chrome-plated pillars was a huge success with the client, and I have since used a number of the processes again in subsequent pieces," he explains.

His current favourite piece is 'Carbon', an oval dining table that he completed recently. He told us that this table was quite a challenge: "An exacting specification, some interesting geometry, new materials and the need to get sufficient stiffness into the structure for stability made it quite a tricky piece to get right. My clients' brief required that the piece can be dismantled to be taken in parts to their holiday home in Italy, so on this occasion I created an instruction booklet showing how to assemble the piece in addition to providing information on how to care for it. I am delighted with the table, and more importantly, so are my clients."

'Carbon', an oval dining table in ash, wenge and clear glass with a supporting structure of carbon fibre

'Victory', a display case and base cabinet made in European oak

Design ethos

Graham's primary concern is to make the customer happy: "For me, there's nothing better than seeing a client that is delighted with my creation," he says. "I try to establish as early as possible what problem the piece will resolve; why it will exist. It is an old cliché, but it is so important to listen carefully to what the client wants and to tailor each piece to their individual lifestyle, taste, desires and aspirations. Some clients have a really clear picture of what they want, but often the picture is incomplete; they have approached me not only to make the piece but also to use my knowledge and creativity to help fill in the gaps in their brief."

The nature of his commissions means that Graham has been able to work in a very wide variety of styles and forms, which is something that he enjoys: "I am not sure I could work in just one style; it is the variety that keeps me stimulated." He likes making pieces with strong, crisp lines, often incorporating long gentle curves. He is always looking for new ideas and researching new materials, although this can sometimes cause difficulties. "Finding suppliers that will supply top quality products for one-off designs in a field that they are not perhaps familiar with can sometimes be quite a challenge. Where possible, I like to build relationships with local suppliers that understand the work I do," he says.

Graham told us that he strives for perfection when making every piece: "I believe it is attention to detail in both design and making that will make a good piece great. Time spent getting the design just right, making small changes in proportion, texture, colour, etc., can make a significant difference to whether the piece looks right and functions really well. At the making stage it is critical not only to select good quality timber and veneers, but also to apply them thoughtfully to create pieces that have balance or asymmetry, and complement or contrast, as the design requires. The best pieces are a marriage of excellent design, high-quality making and careful selection and application of materials."

He enjoys commissioned work. "I really like working to a brief, it forces me to consider avenues that I might not have otherwise explored; there can be real satisfaction at the end of an interesting and challenging journey. I get huge enjoyment from problem solving. Every new enquiry leads to its own challenges, and I love that moment when I visit a new client for the first time; I have no idea where the conversation will take me and what I'll be asked to create."

Influences and inspirations

Graham identifies Jonathan Markovitz as the single person that has had the biggest influence on his furniture making. "At the time when I decided to venture into furniture making, I had two young children to care for, so a year out to learn furniture making at a college or university, or with another maker, was impossible. I already had very good design and making skills from my training in precision engineering together with my experience as a carpenter and joiner. However, I lacked some key skills that are unique to furniture making. I approached Jonathan, who was able to tailor a short course for me that was designed to fill in the gaps in my knowledge. I learned from him the key elements of how to create fine furniture to the standards that are demanded by discerning customers; he continues to be a friend and an excellent mentor."

He admires the work of many other makers, including James Morley whose work caught Graham's attention early in his furniture-making career. "Around the time that I was setting out as a furniture maker, James was producing a series of articles for *F&C* titled 'A word from the bench'; I guess the series might perhaps now be called a blog. The series chronicled the trials and tribulations of establishing a new workshop in The Old Bakery at Hartland in Devon; for me the timing was perfect," he says. Inspired by these articles, Graham contacted James and was invited to visit the new workshop. "James gave his time generously, for which I will always be grateful, and his wise words helped to inspire me and steer me through my first years as a furniture maker. The elegant sinuous curves of James' library steps and quill mirror have also inspired my own work and have helped me to define an early style of my own," he comments.

Watch case in Indian rosewood, maple and polished chrome. The case accommodates a collection of cuff-links in individual compartments

Approach to design

Graham's design process starts from the client's brief. He told us that he begins by 'throwing down' lots of potential design ideas as quick thumbnail sketches: "Often I will put the job down for a week or so and when I come back to it there will be more designs that were not there before. I also look back at the previous sketches and see them with a different view; some look good and are developed further while others are rejected. I can sometimes find new applications for my previous ideas that can work well for a new brief," he explains.

He generally uses 3D CAD drawings to present his final designs, but in the early stages of the design process he utilises the sketching and draughting skills he learned as an engineer. "These really help people visualise my thinking; I also find that scale models can be helpful," he says. "Giving clients a clear understanding of how their piece will look and function is so important; it helps them to have the confidence to move ahead with the work."

Although Graham considers the form of a piece first of all, he says that function is the most important aspect of most furniture. "I always start from how I want the piece to look and feel, and then work out how it can be made. I guess that for me, 'form' takes the lead and comes before function in the early stages of my designs. However, I firmly believe that function is of primary importance; with the exception perhaps of pieces that are primarily works of art for which function is of minimal importance or even irrelevant. A piece of furniture may look wonderful, but if it does not function well, then the client will soon become irritated and will tire of it. The challenge, then, is always to create pieces that function well, but which also look stunning."

His furniture is produced using a combination of traditional hand skills and woodworking machines. Graham believes that both traditional and modern techniques have their advantages: "Machines, particularly in combination with shop-made jigs, can speed-up production and create a degree of accuracy and repeatability that is essential to some designs, but which is very time-consuming to achieve by hand. Hand work,

however, is essential too; hand fitting ensures that everything is aligned and functioning correctly. All of my work is hand finished."

Finding clients

Graham told us that he is fortunate to have a good number of regular clients who are pleased with his work and who return to commission new works, but, as many professional makers will understand, there is always a need to find new customers. His main way of doing this has been through business networking events. "I avoid the really high pressure networking groups that require members to continuously invite visitors and create leads for other members", he says. "I prefer to focus on groups in which I can build relationships with other small business owners; they get to know what I do and to understand the value in the work, and will recommend me to their own clients and friends."

He exhibits his work at shows as a way to promote his business and has a purpose-built exhibition stand for local events and agricultural shows. Graham also exhibits at some major furniture shows, such as Celebration of Craftsmanship & Design at Cheltenham (CCD), and last year at The Millinery Works. "At a recent CCD, I exhibited 'Victory', along with a small collector's cabinet and my high back chair. 'Victory' is a display cabinet made in oak (*Quercus spp.*) with gently curving legs on a base cabinet with bookmatched oak panelled doors that show an attractive pattern of medullary rays. The curved legs flow up into a slender glass case that is designed to accommodate an exquisite model of HMS *Victory* that was made by my client. He bravely agreed that I could exhibit the model along with the cabinet at CCD, leading to a couple of very nervous journeys to Cheltenham and back!"

Other skills

In addition to designing and making the furniture pieces, Graham is also developing his photography skills to aid the presentation of his work. "I have been an amateur photographer for many years, so learning studio photography techniques has been a real pleasure," he says. "It saves me money too, as I am not having to pay someone else to do it for me."

Future plans

In his career, Graham has also completed several restoration projects and tells us that he has been asked may times to restore older pieces of furniture: "The heirlooms of the past, which have seen better days," as he describes them. Often the pieces he is asked to rejuvenate show the signs of heavy use or accidental damage, or they may have deteriorated after being stored in damp out-houses or centrally heated homes.

Maker's maker – Daniel Lacey

Among a myriad of design influences it is not easy to select just one name, but perhaps the person whose work and achievements I would most like to emulate is Daniel Lacey. A student of the prestigious Parnham College, he was trained by world-renowned furniture designers, including John Makepeace and Robert Ingham.

I have met Daniel just once, and found him to be a very likeable guy with a lot of talent and knowledge and a willingness to share them with others. Daniel's work exemplifies the traditional craftsmanship combined with innovative ideas and contemporary styling that I aspire to in my own work. Every piece is a unique work of art; crafted to a standard that is borne out by the five Guild Marks he has been awarded for his work to date from the Worshipful Company of Furniture Makers in recognition of excellence in design, materials, craftsmanship and function.

Daniel's designs not only demonstrate excellent selection and application of timber, they are also beautifully engineered using innovative solutions. Perfect examples would be 'Chestless', a set of seven drawers without a chest worked on the cantilever principle, and the extending drop-leaf dining table with an opening mechanism that was designed to seat the maximum number of people round a table that takes minimum space when not in use and without anyone having to 'sit round a leg'.

For me, a look at Daniel's portfolio is a series of 'I wish I'd thought of that' moments. Clever use of gentle curves and excellent jointing in his range of elegant chairs exemplify the work of a maker whose pieces have a wonderful elegance and simplicity, along with great proportion and attention to detail.

'Chestless', 380mm wide × 1,470mm high × 540mm deep, cherry, ash and cedar of Lebanon

PHOTOGRAPHS COURTESY OF DANIEL LACEY

Extending drop-leaf dining table, 350mm × 750mm high × 1,750mm long, local ash, awarded Bespoke GuildMark 372

Graham comments that restoration commissions are frequently a challenge: "Like old houses, they have a habit of hiding problems that are not immediately obvious." That said, he tells us that he always finds it a pleasure to breathe new life into pieces that are often loved possessions, which have been passed down from generations gone by.

Just a few examples of pieces Graham has worked on include a demi-lune card table and a Globe Wernicke bookcase.

An exhibition of Graham's work was held at Curwens Gallery, Royston, in November last year. This showcased some of his clocks, boxes and turned work, as well as some of his smaller furniture pieces.

Graham is now working on designs for a set of dining chairs and carvers that will complement the 'Carbon' dining table, keeping the carbon theme and perhaps incorporating the oval too. In the workshop, he is also working on an easel for a local wedding venue, and a range of pieces to furnish a cinema room, as well as other commissions.

As well as these projects, Graham is also developing designs for non-commissioned pieces: "I am always sketching new designs and details from the world around me for use in future projects. I have some ideas for speculative work that I would like to make for future exhibitions and which I can use to experiment with new materials and design ideas." He told us he is looking forward to developing his making style in new directions and we're sure that he will be successful in his future work. F&C

"I am always sketching new designs and details from the world around me for use in future projects. I have some ideas for speculative work..."

'Collector's Cabinet', a small seven drawer chest in Indian rosewood and lacewood. The drawers are retained by small magnets so that the piece can be carried without the drawers sliding out

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Technical Specification:

wheel diameter	600mm
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table tilts	0-20 degrees
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dust outlet	100mm
Shipping	230x860x2080mm

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Features:

Panel saw sliding beam
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Cast iron tables
Sturdy swinging arm squaring frame
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Technical specification:

PLANER:	
Max planing capacity:	300 x 220mm
Length of tables:	1500mm
Cutter Block Dia :	70mm
Fence angle tilt:	90° 45°
No of knives:	3 300x20x3
Max Stock removal	4 mm
Feed rate:	7 m/min
CIRCULAR SAW:	
Blade tilt:	0° - 45°
Blade diameter:	250mm
Scoring Blade	90 mm
Max blade height 90°:	80mm
Sliding carriage:	1250 x 315 mm
SPINDLE MOULDER:	
Shaft Stroke	115 mm
Shaft Dia	30 mm
Speeds	2000/3100/4400/7000 rpm
Max dia of tool	160mm

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iTECH DC001S 1 Bag Dust Extractor is a ruggedly extractor is designed for small workshops. The industrial construction and quality finish sets it apart from others.

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Technical Specification:

Fan diameter	300mm
Inlet diameter	125
Inlet holes	2 x 100mm
Air capacity	1490cfm
Bag diameter	500mm
Packing size	920x580x580cm
Motor power	2hp
voltage	240v

iTECH W0501 Oscillating Edge Sander

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The iTECH 501 Oscillating Edge Sander can be used in for getting a superb edge finish. the oscillation reduces marks and scratches free and helps to prolong belt life. The cast iron table combines with a simple rise and fall handle plus an angle adjustment allowing you to use the full area of sanding paper. Mitre fence and slot also included.

A rubber coated drive drum provides positive grip and maximum power transfer. The belt tensioning and tracking operations are a simple and quick process. The sturdy cabinet base includes a storage area for abrasives. The auxiliary table with sanding drum for internal or external shaped work

Technical Specification:

Motor power	2hp
Belt dimensions	2473 x 152mm
Belt speed	1033m/min
Main table dimensions	905 x 305mm
Auxiliary table dimensions	290 x 259mm
Platen tilting	0 - 90 degrees

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Straight & narrow

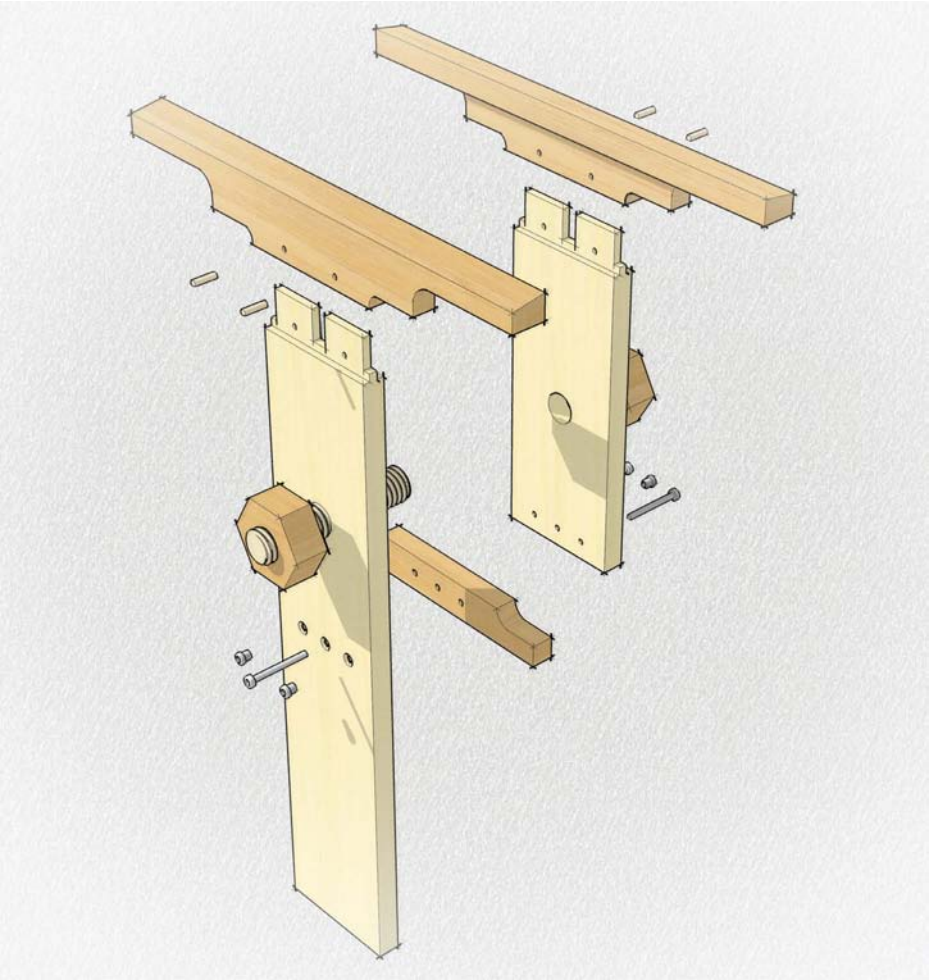
PHOTOGRAPHS BY GMC/DEREK JONES

Next to your bench hook and shooting board, a good saw vice is a must for any hand tool workshop

In our pursuit of techniques to make us better woodworkers, it's easy to overlook some of the associated skills that make us a more rounded craftsman. Although we are generally comfortable with the idea of maintaining our straight-edge tools, few of us are quite as adept at keeping our saws in good shape. Over the next few months, we're going to tackle some of the issues that make this skill something of a dark art and open up the world of sawtooth geometry. Not all of us will develop the skill to be self-sufficient but we will have a greater understanding of the subject and be able to convey our requirements to the local saw doctor.

For those of you who do want to take up the challenge, sharpening a saw plate can be quicker and less demanding than sharpening a plane iron. The vice in this project might not be appropriate for every saw in your till, but the dimensions can be adapted to suit your requirements.

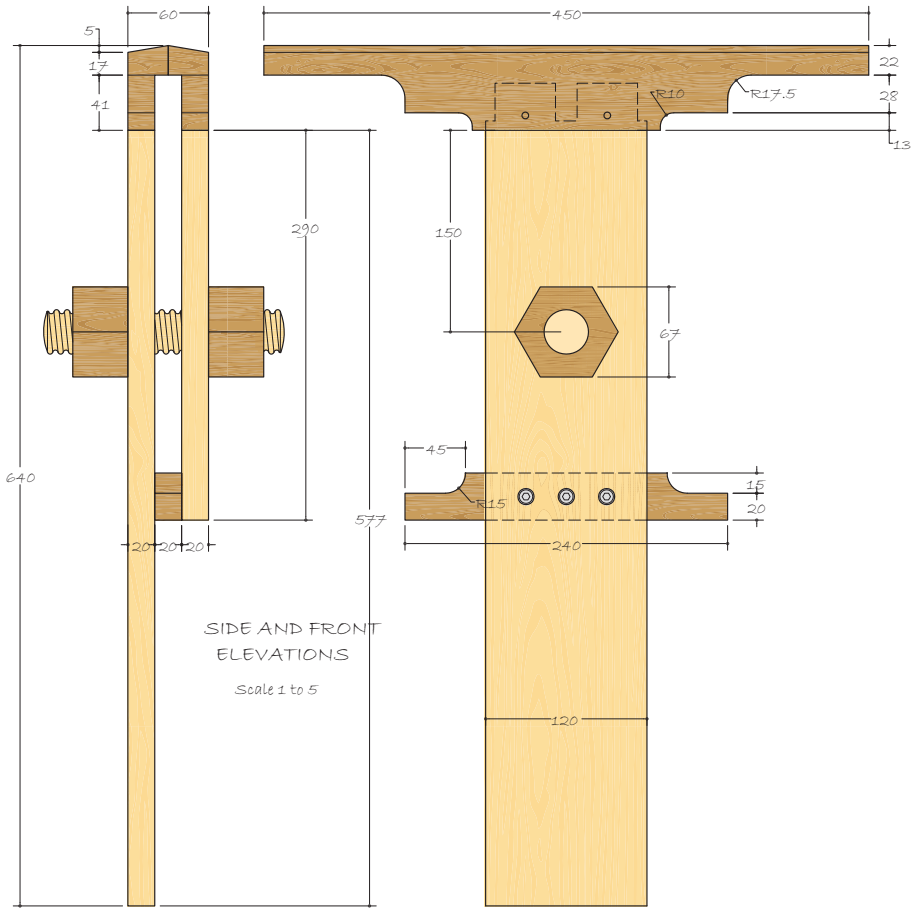
Commercial saw vices tend to be made of metal and make the most of what that material has to offer by being streamlined and strong at the same time. Timber doesn't always perform the same way so I've introduced some fine joinery to get round this and used its inherent flexible quality to our advantage.

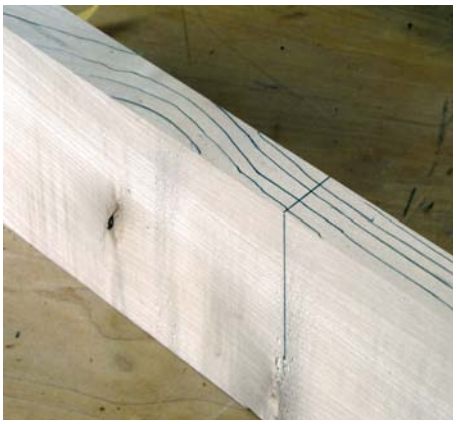


Timber selection

The purpose of a saw vice is to support the saw plate while sharpening and counter any tendency for the plate to vibrate under the force of filing. Obviously that means that the jaws must clamp tight onto the plate and with a 'shop-made version constructed entirely from wood, carefully selecting materials in the first place will pay off in the end. I've used sycamore (*Acer pseudoplatanus*) for the main supports and avoided any sections of grain that appear to be running off to one face as they will weaken the structure. The vice jaws are made from sapele (*Entandrophragma cylindricum*), which is well known for its stability and relatively straight grain. I was fortunate to have suitable offcuts and if you are too just make sure they are up to the job. Don't take chances, be picky.

The two components are joined with twin mortise and tenons draw-bored for extra strength. Although easier to produce and very effective at resisting twisting, a wide single mortise would remove a lot of material from the jaws and perhaps weaken a joint that needs to withstand constant stresses in use. The haunches at each end aid registration in the mortise, while the stub tenon allows extra material to remain between the two full mortises. It can be an advantage to drill some of the waste out from the mortise if you intend to use standard bevel-edged chisels to chop out. Just be careful not to let the chisel veer off course; the path of least resistance may well be the walls of your mortise.



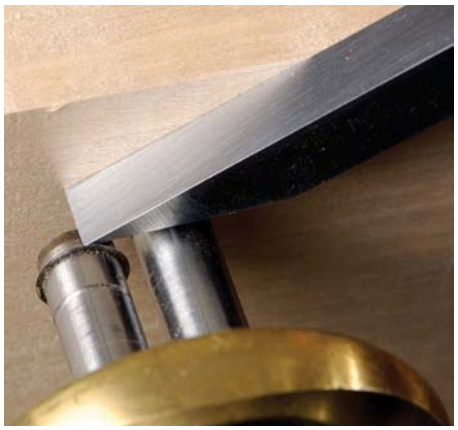


Avoid sections of timber with diverting grain

Pre-drill the mortises if you are going to chop them out with standard bench chisels

One stop mortise gauge

The Veritas dual marking gauge is a useful tool for setting out your mortises even if it is a little counterintuitive at first. Crucially the first thing to do is to set the wheels to capture the width of chisel or mortise that you require. You'll need to have one of the side screws slackened off to do this. Once done, lock this setting with the shaft clamp accessory and leave it locked. Now loosen the second side screw and set the gauge stock to position the mortise where you want it. Tighten both side screws now and you're ready to mark out both parts of the joint. Metal-faced gauges always work better with a dab of wax. Paste or candle, it doesn't matter.



Set the two wheels on the gauge to capture the width of the chisel

Lock this setting in place

Calculate the offset and apply to all the components from the common face

Faster mortising

Mortise chisels are built for pounding into wood. Putting a polished edge on them is not necessary. Their deep sides are there to register against the walls of the mortise keeping you on track as you work. There's no need to pre-drill, just start chopping about 5mm in from one end and stop 5mm short from the other, then come back the other way.

Take small bites and lots of them. Don't be too heavy-handed or you'll spend more time struggling to free the chisel up for the next chop. If you need to lever back and forth at the ends of the mortise, do so. That's why that little bit of waste is left until last. When you've achieved the required depth, put a fresh edge on the chisel and clean up the ends.

Keep a diamond plate or something similar handy to tune up mortise chisels as you work. Dispense with the honing guide or you'll be there all day

Sure fire tenons

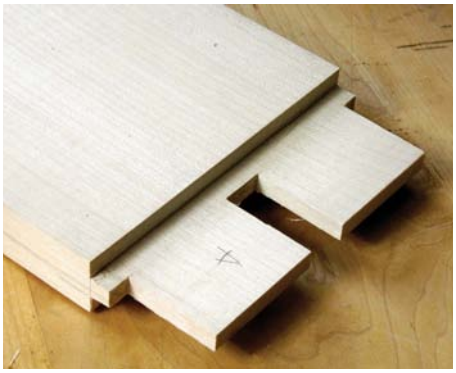
With the mortises chopped out you can now turn your attention to the twin tenons. If you're cutting these by hand there are a couple of things you can do to ensure you end up with crisp shoulders. Option 1: define the shoulder line with a gentle slope created with a chisel. The indent or valley will guide the saw in a straight line, leaving you to concentrate on the depth of the cut.

Option 2: clamp a straight piece of timber on top of the shoulder line and use it to run the saw plate against though there is no substitute for actually being able to cut confidently to a line. My preference here is to cut the cheeks of the tenon first. Any slight over-cut doing it the other way round will result in weakening the tenon at its most vulnerable point.

Adjust the tenon thickness with a router plane

Option 1: score first with a marking knife then chisel an incline towards the shoulder line

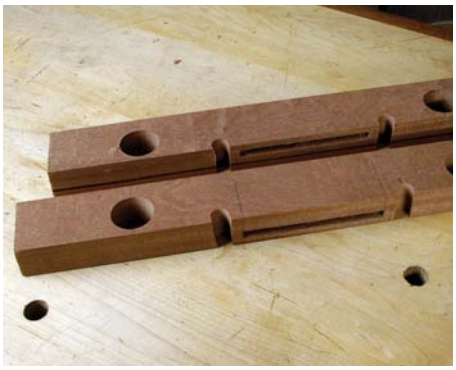
Option 2: set a straightedge dead on top of your shoulder line for the saw to run against



Twin tenons complete with haunch at both ends and a hint of stub tenon in between

Shaping the jaws

The exact location and size of the cut-outs for the under side of the jaws will be determined by the shape and size of the saws you intend to sharpen: the relationship between handle and toothline being the main focus. A word of caution here: remove too much material and your jaws won't be rigid. Remove too little and you may not be able to accommodate the saws you want. For now, less is best as adjustments can be made when the two sides are complete. I found I could fit all my saws with just two steps and drilled through holes to roughly match the shape of my saw handles. A large rebate was also cut on the inside face of the jaws but not completely squared off at this stage. Draw-boring the tenons adds strength to these relatively small joints and Chinese wooden nails are perfect for this application. Small, well proportioned tight joints will outperform large sloppy ones any day.



Drill for the curved profile before sawing

Chinese wooden nails are great for small draw bore pins

The jaws are shaped to hold as much of the saw plate as possible

Fine-tuning the jaws

With the two arms assembled, square off the rebate on the inside face of the jaws. A skew rebate plane comes in handy as the fence post can be used to gain a little more purchase and force it tight into the corners. A shoulder plane or scraper works just as well.

Next, plane the meeting faces of the jaws so they are parallel and square. Test them by assembling the vice and making sure the faces are in contact all the way along their length. You may find that this is best achieved by first creating a slight hollow – no more than a couple of passes with your finest plane – on both jaws. You can use this feature as well to obtain more clamping pressure at the ends of the jaws if you need it later on.

There is a school of thought that suggests square faces on saw vice jaws are not as effective as ones that come together at a point. I'm not convinced but you may find it works for you. Another variation is the amount of bevel applied to the top edge of the jaws. A steep angle will allow you to drop the file lower into the gullet of the tooth without having the sawplate projecting high above the jaws. My advice at this stage is to set the bevel at around 10 or 15° and make adjustments as necessary when your saw sharpening technique is developed and your vice is well tuned. Whatever you decide, make sure both jaws are the same.

A skew rabbet block plane or shoulder plane will clean up the rebate

Plane the face of the jaws so they are straight

Add a slight concavity in equal measure to both jaws at first if it helps

Parallel jaws for maximum clamping surface

Clamping mechanism

When I said that this vice was made entirely out of wood, that's what I meant. I looked at dozens of vices in preparation for this article and there doesn't seem to be a clear winner as far as what constitutes the best clamping mechanism. It's highly likely you could cobble together an assortment of hardware from your local tools and fixings supplier, or you might be happy with just using a clamp instead. I've even seen some versions that use a quick-release cam-clamp axle from a mountain bike. I can't vouch for it but it certainly has all the requirements.

The solution I came up with was fun to do and meant I didn't have to leave the workshop to get it finished. Thread kits are relatively easy to come by. This one came from Dictum in Germany. They supply lengths of corresponding dowel as well.

One of the supports has a thread cut into it as well as the two nuts. The other has a hole drilled oversize so the threaded section can pass through. Tapping the holes might require a buddy to spot for you.

The V gouge that is the cutting tool in the thread box will benefit from a little sharpening if it's new. Try honing on the side of your stone or with a little abrasive paste on the edge of a piece of MDF. A leather strop or buffing wheel works just as well. The nuts need to be large enough so you can get a good grip of them. Don't rule out putting a little tommy bar through the middle. The chances are that the newly formed threads will be tight. Don't force them: instead, reduce the tip of the thread on both components with a little abrasive and apply some candle wax to free them up.

Here's just one solution to make sure you get adequate clamping pressure

The tops of the thread can be fragile so reduce them before they break

Get someone to spot for you to make sure the holes are tapped square

Alternatives

Search online for images of saw vices and you will come up with dozens of variations ranging from the ridiculously simple to the simply ridiculous. Hopefully this one sits somewhere in the middle. As far as new commercial vices go, I'd take a look at the Gramercy saw vice: an all-metal design that will last you and yours well into the next century and beyond. If you don't like the thought of cold steel, then Texas Heritage will soon be launching a very fine design to complement their Moxon vice kit. The second-hand market is always an option and there are some vintage models out there. If you spot one and can't get to see it in the flesh, then do enquire about the state of the clamping mechanism. The cam-clamp lever style can suffer from wear. F&C

This vintage bench-top mounted saw vice has a quick-release cam clamp mechanism

The Gramercy Tools saw vice

The Texas Heritage saw vice

The ridiculously simple, and yes it works

Use any combination of clamps or holdfasts to position the vice anywhere on your bench

Mounting your vice

This saw vice has been designed to fit into a standard bench vice. One leg has been left short to rest on top of the bench and resist some of the flexing during use. The space bar between the arms that caries the connecting bolts has been extended each side so that any combination of clamps or hold-fast enable it to be positioned almost anywhere around the bench.

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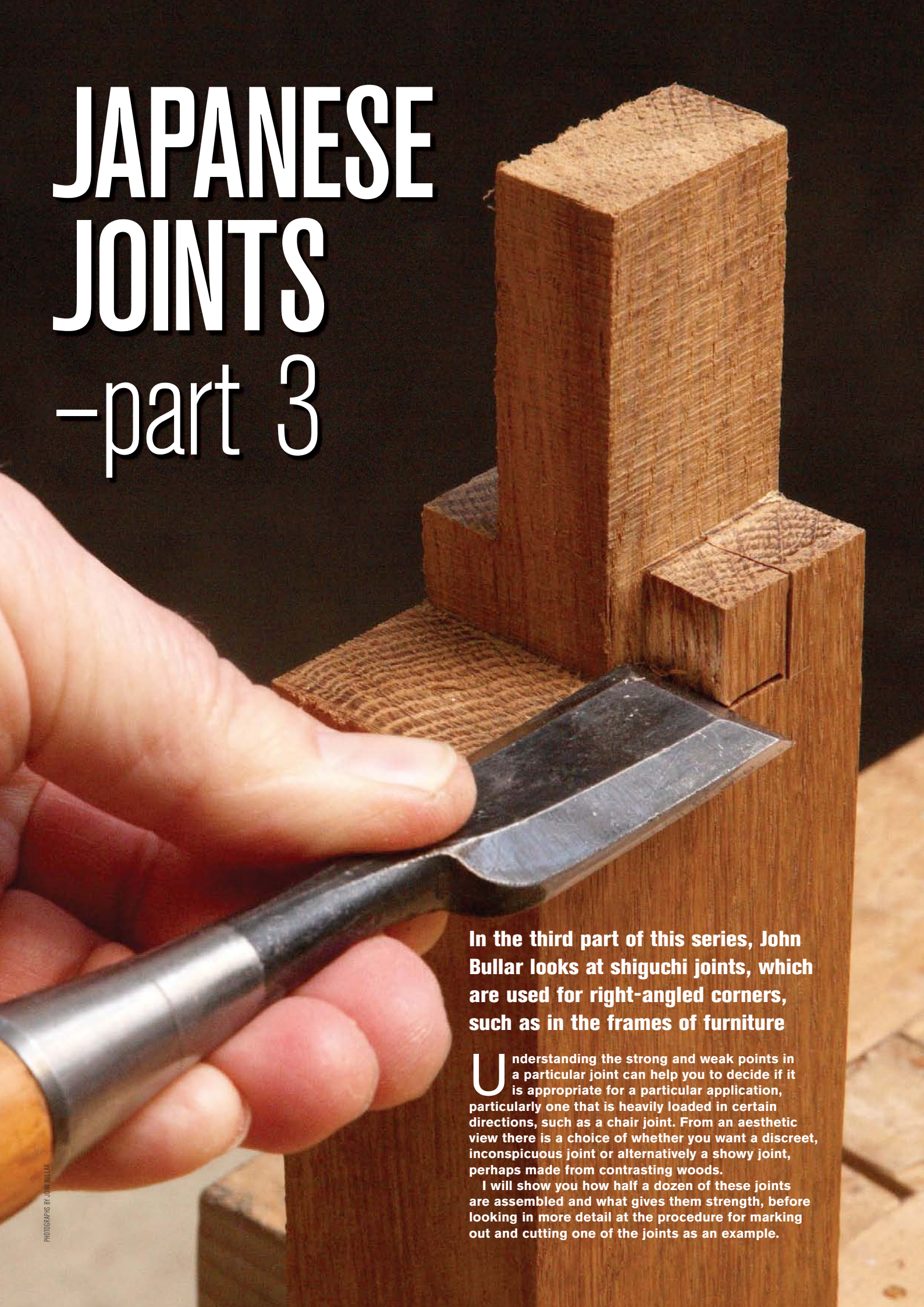
The saw doctor will see you now

Next month, we begin to delve deep into the gullets of the tooth line, discover the best cure for split nuts and how to retension a saw back

JAPANESE JOINTS –part 3



PHOTOGRAPHS BY JOHN BULLAR

In the third part of this series, John Bullar looks at shiguchi joints, which are used for right-angled corners, such as in the frames of furniture

Understanding the strong and weak points in a particular joint can help you to decide if it is appropriate for a particular application, particularly one that is heavily loaded in certain directions, such as a chair joint. From an aesthetic view there is a choice of whether you want a discreet, inconspicuous joint or alternatively a showy joint, perhaps made from contrasting woods.

I will show you how half a dozen of these joints are assembled and what gives them strength, before looking in more detail at the procedure for marking out and cutting one of the joints as an example.

Slot joints

The first four joints we will look at are Japanese variations on the slot joint. These are particularly useful for thin or narrow frames where there is no room to fit a conventional joint.

The precise sawing of the cheeks can either be done with a tenon saw, carefully following knife-marked lines, or with the bandsaw against a rigid fence.

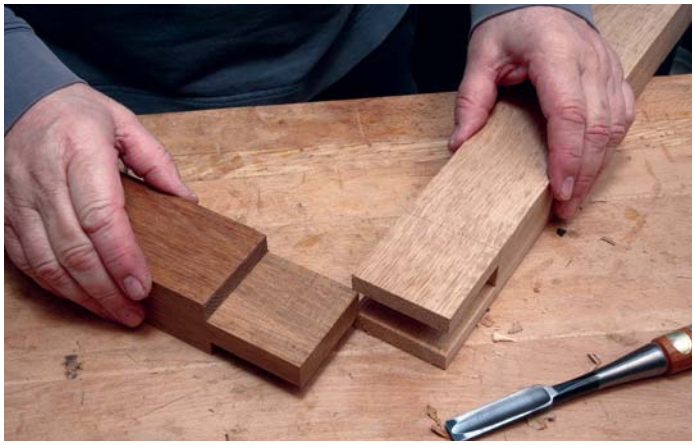
The strength of a slot joint comes from the large areas of the glued long-grain faces. I find this joint is best made with modern adhesives, such as waterproof PVA types and clamped firmly between faces while the glue sets. It is ideal for making rigid lightweight frames.

Although strictly these are bridle joints rather than mortise and tenon joints, I will refer to the components as mortises and tenons for convenience.

Full width open slot joint

The kanegata sanmai hozo, or open slot joint, is simple in principle and very effective when precisely cut and joined with modern glues. There are, however, some disadvantages to watch out for. The kanegata sanmai hozo is rather an unforgiving joint to cut as the spacing between the faces of the mortise socket must be a uniform match.

The tenon is not surrounded by the socket so it can easily disengage and also the prongs around the socket can spring apart when twisted. This means the joint has little mechanical strength before gluing. However, once glued up it is one of the strongest corner joints for thin material.



The kanegata sanmai hozo or open slot joint is a version of the bridle joint

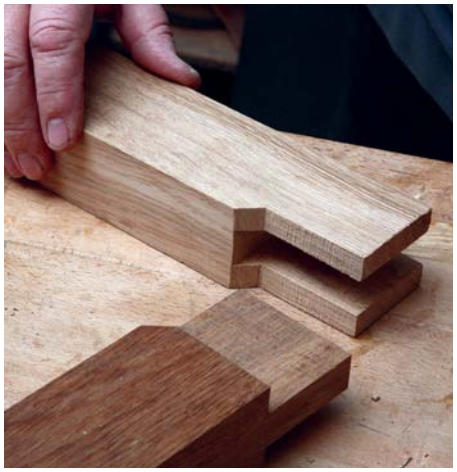
The strength of a kanegata sanmai hozo joint comes from the large area of the glued long-grain faces, which must be a good fit

Part mitred slot joint

This part-mitred sammai gumi is one of many possible variations on the open slot joint. It is made in much the same way as the simple slot joint with the addition of a mitred section, which can be any size to suit the furniture being made.

All mitred joints depend on accurate alignment of the angles to avoid gaps marring the appearance, as any picture framer knows! Mitres are normally cut at 45°. However, it is far more important that the two halves match than whether the angle is exact, so I would mark one side of the joint or the other to get the best fit.

It is also essential the wood be well dried as large seasonal movements can have an alarming effect on a previously well-fitted mitre. By limiting the mitre to a small proportion of the timber width, the effect of seasonal movement is minimised.



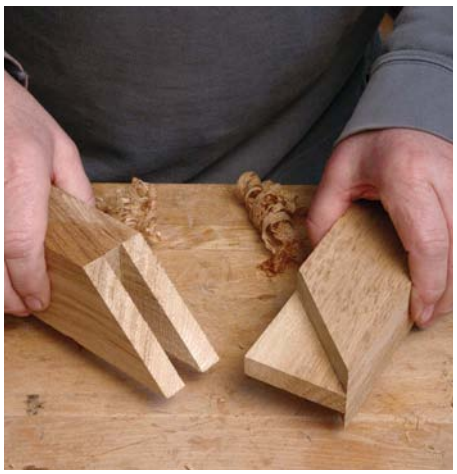
The part mitred sammai-gumi joint is one of many possible variations on the open slot joint

As with any mitred joint, accurate alignment of the angles is essential for a good fit

Fully mitred slot joint

This tomekata sanmai hozo or full width mitred slot joint is excellent for providing neat barely noticeable mitres. It is another variation on the bridle joint, made using the same techniques as the previous two joints. I prefer to slot the open mortise before cutting it at 45°, then carefully mark the tenon shoulders at a matching angle.

The tomekata sanmai hozo joint works best on a small scale where it provides strength that could not be achieved with a simple butted mitre joint. It is, however, difficult to align and prone to weakness with seasonal movement if made with large section timber.



The tomekata sanmai hozo is a full width open slot mitre

The tomekata sanmai hozo joint is particularly suitable for making strong small-scale mitre joints

The wanagi-komi joint is an open slot mortise with a full section tenon

With a well-fitted peg driven in the wanagi-komi is locked solid

Slot and full section tenon

Useful for joining woods of different thicknesses, such as between a table leg and rail, the wanagi-komi is an open slot bridle joint with a full section tenon. This can also be made in a T-shape as an intermediate joint where it has the advantage that the rail is not weakened by being reduced in thickness.

Because the wanagi-komi tenon has no shoulders, alignment can be improved by driving a peg through the centre of the joint as illustrated here. The hole is chopped with a chisel, ideally one very slightly narrower than the peg so the edges can be pared away to a good fit. A piece of waste is slid into the slot to prevent the inner cheeks crumbling while the hole is being chopped. As with all through-joints, the exit hole is chopped from the far side to prevent it splintering.

Shaping the tenon sides for a eriwa kone hozosashi or collared haunch mortise and tenon joint

Ready to assemble the eriwa kone hozosashi has a two narrow stage tenon and a full width collar

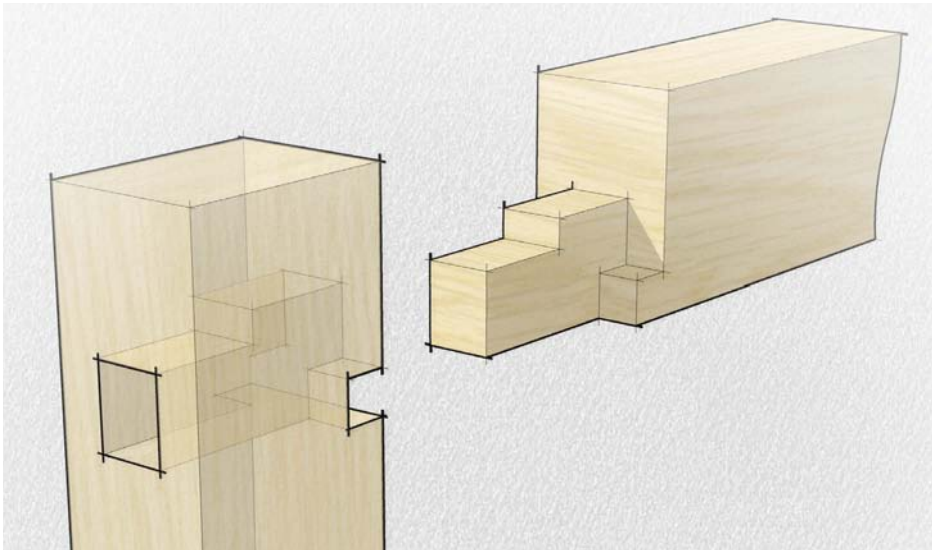
Once engaged the narrow tenon passes through the mortise while the wide collar prevents twisting

Collared haunch joint

The eriwa-kone hozosashi or collared haunched mortise and tenon joint has a narrow two-stage tenon together with a full width collar. This is very different from normal Western joints so I will explain how it functions.

Because the mortise is narrow it does not weaken the wood around it. By cutting a haunch – internal shoulder – in the mortise and tenon, the short-grain at the far side of the mortise can be increased in length to reduce the risk of the joint breaking out under load.

Although the tenon must be relatively thin to fit the mortise it is amply strong in tension. However, a thin tenon like this can be prone to twisting and the full width collar at the base of the tenon is there to counter this tendency. Engaged in the slot that runs into the mortise, this collar locks the joint solid and eliminates any twisting.



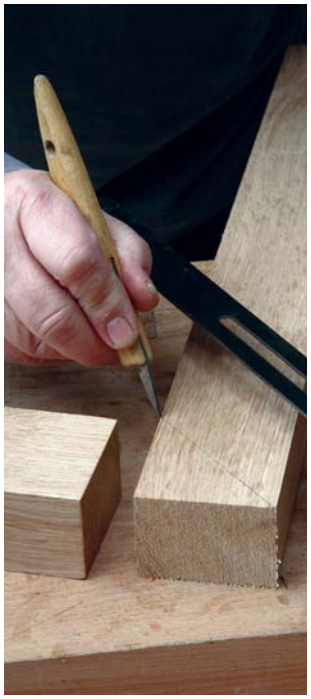
Eriwa kone hozosashi

Collared tenon mitre joint

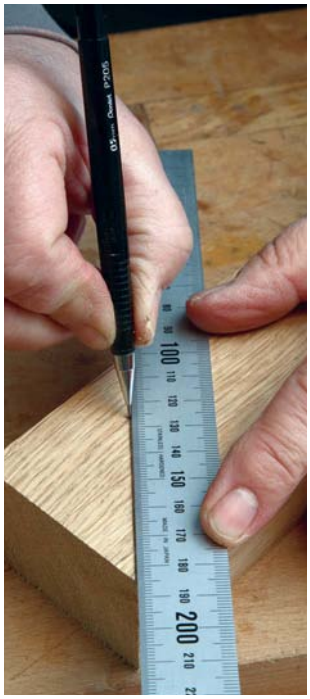
This hako dome joint has a collar running across its width to provide stability against twisting. It also has an outer mitre on the corner, together with a full width bridle or open-sided mortise and tenon. As an example, I will describe the construction of this joint in more detail.

In a sense the hako dome combines the advantages of three joints in one but as usual there are some potential weak points to be on your guard against.

Because the tenon section is cut across the grain at right angles to normal it can be relatively weak when made from open-grained wood such as the oak (*Quercus spp.*) used here. To guard against this the tenon needs to be made thicker than the other sections of the joint. It might be thought a disadvantage that every internal face of the hako dome joint involves gluing to end grain. It is traditionally taught that gluing to end grain is relatively weak. However, there is a large gluing area and modern waterproof PVA type glues form a strong bond with end grain, which makes this a sturdy joint.



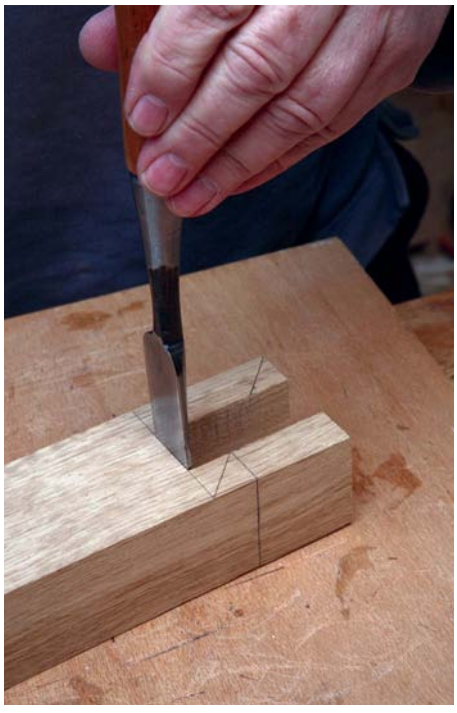
Start by marking out the diagonal for the hako dome which is a collared tenon mitre joint



Divide the diagonal into three for the mitre, tenon and collar of the hako dome

The shoulder line on the hako dome is marked with the aid of a try-square

After sawing the cheeks of the hako dome remove the bulk of the mortise slot with a frame saw



The base of the hako dome mortise is chopped flush with the shoulder line chopping half way through from each face

The mitred outer of the hako dome is sawn at an angle running the blade against the inside of the corner line

Marking out the hako dome

Start by marking out a line across the diagonal of the hako dome. Divide this line into three sections, one for the mitre on the outside, one for the tenon in the middle and one for the collar inside the joint. I suggest you make the tenon thicker than the other two sections to avoid weakness.

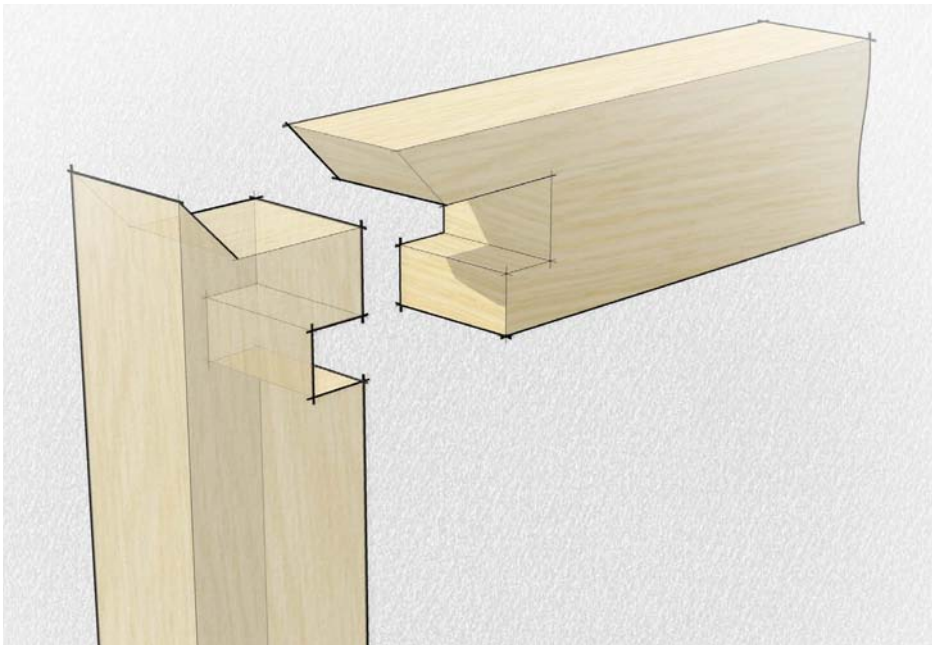
Marking the divisions on the diagonal rather than the end or shoulder is more accurate and gives a better idea of the finished joint layout. The shoulder line is marked with the aid of a try-square, which can be run all around the four sides of the wood to make sure it meets up and the far end, confirming the lines are true.

Cutting the hako dome joint

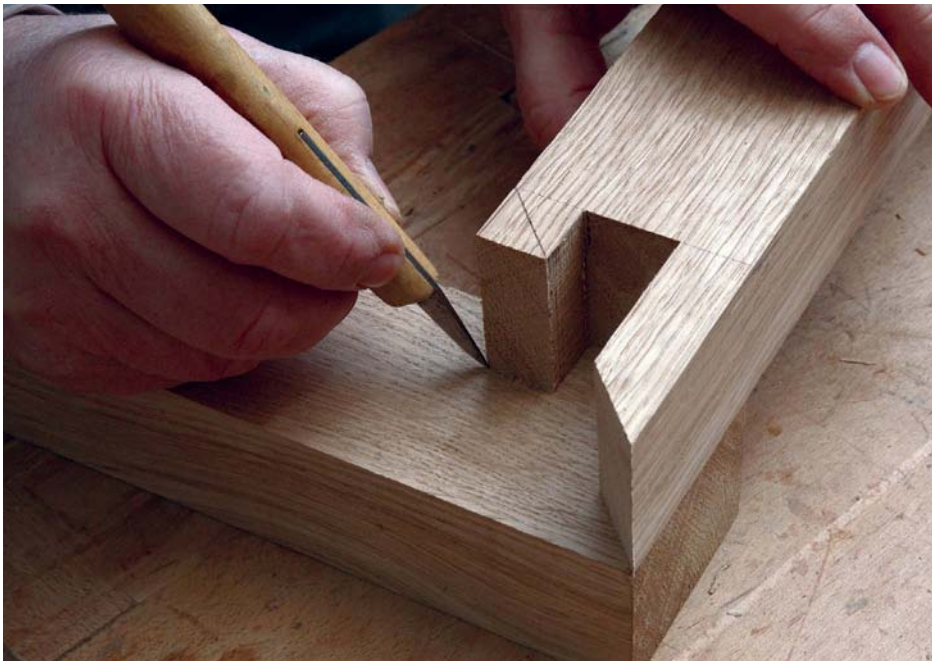
After sawing the cheeks, remove the bulk of the mortise slot with a frame saw. The base is chopped flush with the shoulder line chopping halfway through from each face while the mitred outer is sawn at an angle. To keep the mitre cut accurate I suggest running the blade against the inside of the wood's corner. The mating half is marked from the first half using a fine knife or scalpel, then it is sawn and chopped to shape using the same techniques as the first half.

Assembling and gluing

The hako dome should feel firm when it is trial assembled by sliding the two halves partway together. It can either be fitted from the side to test for any catching as illustrated here, or from the end, which is better once glue has been applied. It is the mitre part of the joint that will most likely show any problems with the accuracy of fit so it requires great care. Once glued up and planed, the hako dome is a visually impressive strong corner joint.



Hako dome



The mating half of the hako dome is marked from the first half using a fine knife or scalpel

The hako dome is assembled by sliding the two halves together either sideways to progressively test the fit, or endways to finally glue up the joint

Conclusions

In looking at this small selection of shiguchi joints used in Japanese woodworking I have tried to concentrate on the ones most likely to be useful in contemporary furniture making. Previously in this series, I have talked about a few Japanese tools, which I sometimes use myself in the workshop. These are very different from their Western equivalents so they are interesting to have. It is certainly not necessary to use all or any Japanese tools for this type of work – good quality Western saws and chisels are quite suitable for making Japanese joints.

I hope you will be encouraged to try some of these Japanese joints in your own furniture making after making one or two trial versions with scrap wood.

In the next article of this series, I will have a look at and discuss some of the slightly more complex Japanese joints. F&C

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Carved 18th-century-style ball-and-claw foot

Dennis Zongker shows you how to carve an 18th-century-style ball-and-claw foot

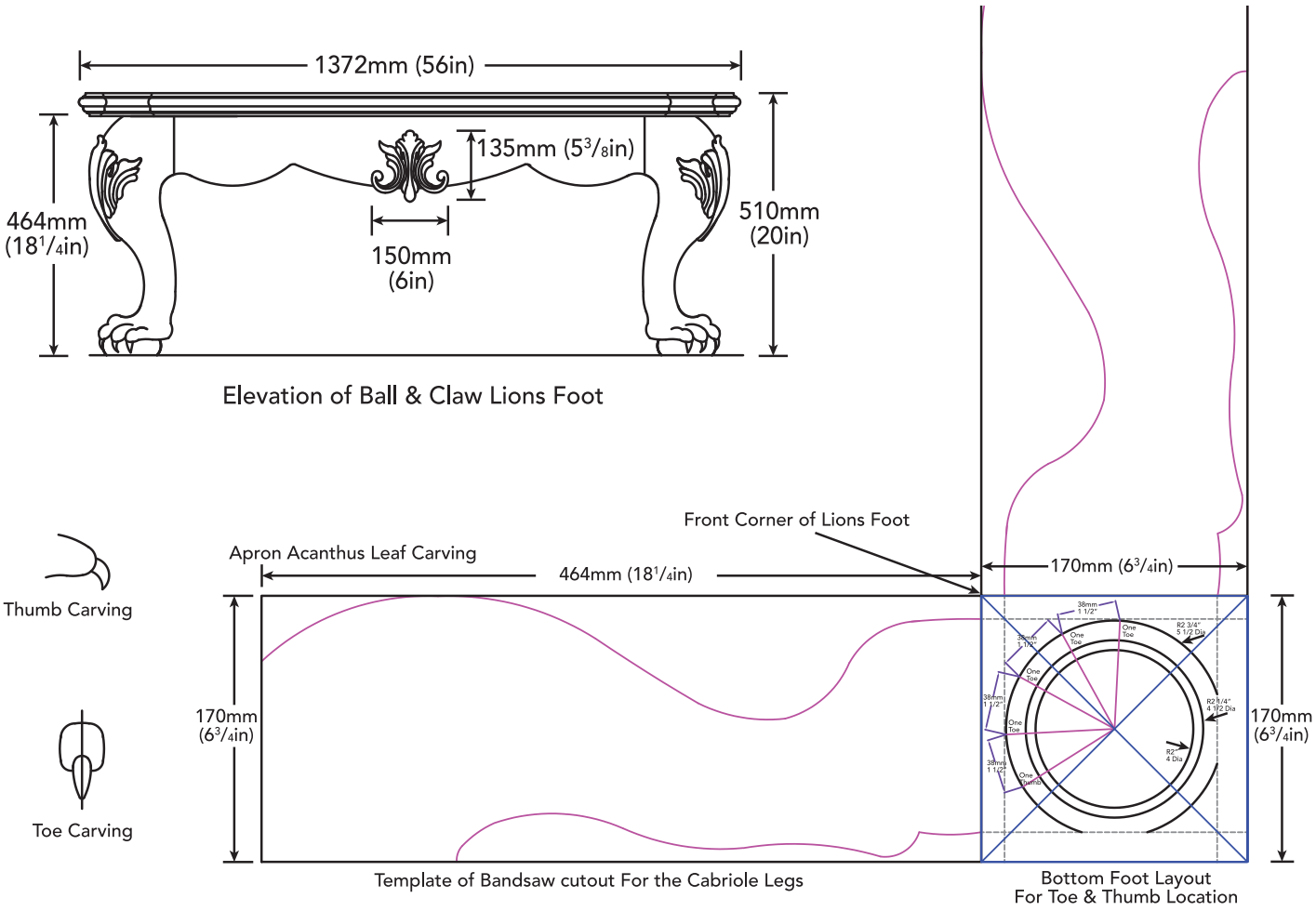
PHOTOGRAPHS BY DENNIS ZONGKER

Looking back through the history of furniture, it always amazes me how the craftsmen were so masterful with the execution of wonderful details, achieving a standard not often seen today. For me, carving a cabriole leg onto a custom furniture piece adds both elegance and style. The carving design on this coffee table is based on a lion's front foot, with some similarities to the 18th-century ball-and-claw style.

To begin the design process I researched the bone and muscle structures of a lion's foot. The front foot has five toes, of which one toe is smaller, like the thumb on a human hand. This toe is set back and is used mostly for grabbing prey and while eating. When the lion is walking or running this toe doesn't show up in the footprint.

When designing the lion's foot I wanted the claws to sit above the ball to show that the whole foot was gripping the ball. This would also give the heel of the foot a more lifelike appearance by setting it below the arch of the foot and having the weight of the lion standing on the ball.

Before carving into wood my first step was to make a full-scale clay model to help me visualise the dimensions of the carving piece. I made an armature similar to the shape and size I was looking for using wood and aluminium sculpture wire. Then, using clay, I shaped the complete cabriole leg with the lion's foot and acanthus leaf. It is a good idea to make a clay model before you start cutting the wood on furniture where you will be making four matching legs. It is also very important to use templates and measurements to keep the correct size and proportion.



Tools required

Carving gouges
No.2, 5mm
No.2, 8mm
No.2, 12mm
No.2, 20mm
No.2, 22mm
No.3, 5mm
No.3, 8mm
No.3, 12mm
No.3, 16mm
No.5, 8mm
No.5, 12mm
No.5, 16mm
No.8, 4mm
No.9, 3mm
No.9, 10mm

Other tools
Plywood for armature
Sculpture wire
Modelling clay and modelling tools
*Mahogany (*Khaya ivorensis*) 19mm thick × 405mm square for top and bottom plates, 55mm wide × 466mm tall for the armature*
Paper/cardboard and pencil
80 grit sanding block
Glue and bar clamps
Bandsaw
Medium wood rasp
Pair of compasses
Hand saw and mallet
Mallet

Making the armature

1 To make the armature out of wood and wire, cut two pieces of plywood to represent where the top will be placed to the leg

To make the armature out of wood and wire, cut two pieces of plywood to represent where the top will be placed to the leg. Draw a 170mm square for the location to screw the wooden armature and placement of the sculpture wire; this is the size of the glued up mahogany *(Khaya ivorensis)* block before cutting and carving.

Oil-based modelling clays stay soft and workable: they never harden or dry. Start applying the clay onto your armature and use modelling tools to shape the location of the claws and the radius of the ball. Using clay for the winged acanthus leaf will also help you to proportion its size to the cabriole leg.

After completing the clay model of the cabriole leg, place a piece of thick paper or cardboard at 170 × 466mm tall just behind one side. Then, using a pencil trace around the outside edges, extending outwards by approximately 12mm. This will leave the extra wood needed for carving the foot and acanthus leaf. This template will be used to trace the cut lines on the glued up block of wood.

2 Start applying the clay onto your armature and use modelling tools to shape the location of the claws and the radius of the ball

3 After completing the clay model of the cabriole leg, place a piece of thick paper or cardboard at 170 × 466mm tall just behind one side

Making the leg

Each leg will need to be glued up into equal 170mm square × 466mm tall blocks. Use kiln-dried 50mm-thick mahogany – four pieces for each leg at 36mm thick × 170mm wide × 466mm tall. Cut each leg out of the same larger board in order to match up the wood grain direction. To get a better glue bond, scratch up each surface being glued with an 80-grit sanding block. Roll yellow glue onto each face that is being glued together, then use several bar clamps and smaller wood blocks on the ends and corners.

The best time to cut the mortise into each leg is now because the leg is square. I use a router table and bit but any method you prefer will work, such as a mallet and a chisel.

Place the paper template on top of one face of your block of wood and trace a pencil line following the edges. Then roll your block over once and draw in the next pattern. Make sure that the foot and upper arch meet together at the front corner.

Use a bandsaw to cut out the back and front lines of the leg. After you have cut out one side, tape back on the waste material to give you back the pencil line.

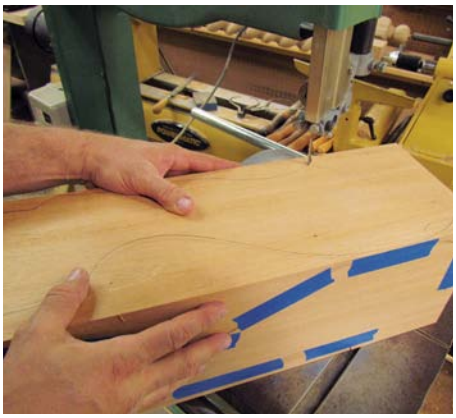
Mount the leg to your carving bench using a carver's vice and screw to the top of the leg. Then, to support the foot, place blocks of wood for it to rest on and clamp down where needed.

To shape the leg, use a medium wood rasp to round the front corner and blend it into the sides with approximately a 38mm radius from the top of the left corner to the foot. For the two inside corners of the leg, shape approximately a 25mm radius starting right under the apron section and blend it down the foot.

4 Each leg will need to be glued up into equal 170mm square x 466mm tall blocks

5 Use a router table and bit to cut the mortise into each leg

6 Place the paper template on top of one face of your block of wood and trace a pencil line following the edges



7 Use a bandsaw to cut out the back and front lines of the leg

8 Mount the leg to your carving bench using a carver's vice and screw to the top of the leg

9 To shape the leg, use a medium wood rasp to round the front corner and blend it into the sides

Carving the foot

One of the most important steps for carving the foot is to set out the spacing between the toes. First, draw in three different circles on the bottom of the leg using a compass. The centre point of the compass is centred to the 170mm square or 85mm in from both front edges. Note: for the outside circle set your compass at 70mm radius to equal the 140mm diameter. This circle is the outside face of the toes. The middle circle at 115mm diameter is where the widest section of the ball and the tip of the claw will start. The inner circle at 100mm diameter will be the smallest diameter of the ball at the bottom of the foot. For setting out the distance between each toe and thumb, see the layout drawing. Make two left and two right feet, with two where the thumb faces inwards and two where they face outwards. Finish rasping the foot following the 140mm diameter circle on the sides and front. Measure 20mm up from the bottom of the foot, then with a pencil draw a line around the front of the foot. This line is where the claw nail point begins.

Next, use a hand saw with a piece of tape stuck to the side of the saw to cut into the foot 12mm deep. Cut around the outside following the pencil line. Using a mallet and a No.2, 22mm carving gouge, you can now cut down to the 115mm diameter pencil line around the circumference of the foot.

Extend the pencil lines from the bottom of the foot to the front face of the foot to where the claws will be located. Next, using the templates of the claw toe and thumb as guides, draw a pencil line following the template edge.

To create the knuckle of the toe, freehand draw in the upper section of the lion's foot, making it slightly wider at the section by the toe with a slightly thinner space closer to the ankle of the leg.

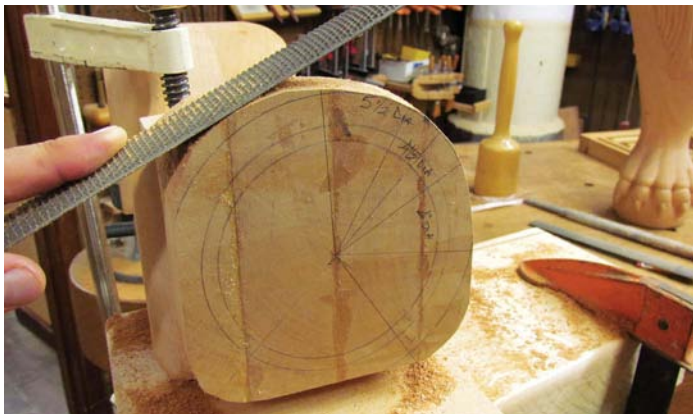
Using a mallet and No.2, 12mm and No.5, 8mm carving gouges, stab cut around the claws and toes. Angle the gouge slightly outward around the toe section – this will make the toe a little larger, giving some extra room.

To remove the waste wood at the heel of the foot, draw a line 50mm up from the bottom of the foot. This is approximately where the heel will rest. Use a No.2, 20mm carving gouge with a mallet cut straight into the heel, then remove the waste by carving up with the gouge flipped over to match the arch of the ball.

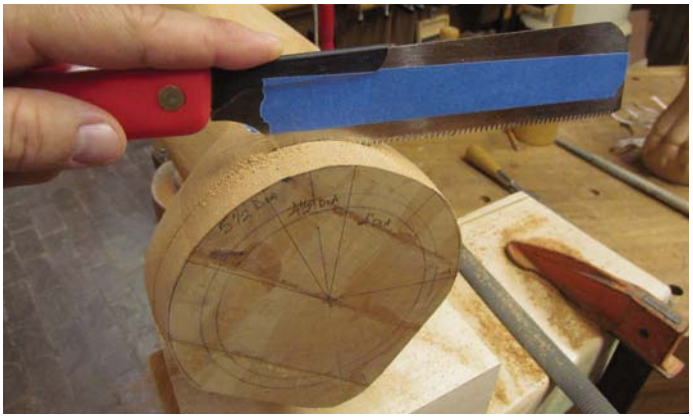
Once you have the ball and heel close to its final depth use a No.2, 20mm gouge

upside down to shape the bottom of the ball by following along the 100mm diameter circle. It is important to leave the centre of the ball at its widest 115mm diameter.

On the side of the foot where the thumb claw is located, draw in the arch of the thumb approximately 12mm higher than the heel. Then use No.3, 16mm and No.5, 16mm carving gouges to remove the waste wood. Shape the ball by using a No.2, 12mm upside down and carving in deeper into the ball up by the foot. On the opposite side of the thumb there is more open space with a larger arch. Again, here you will need to draw in the arch freehand. Try to blend the front toe into the heel. Leave the heel lower to give the appearance that the lion's weight is resting on his heel. Use a No.3, 16mm and a No.2, 20mm to remove the waste wood by stab cutting along the pencil line. Then relief cut up to the stab cut.



10 The first and most important step is to set out the spacing between the toes



11 Use a hand saw with a piece of tape stuck to the side of the saw to cut into the foot 12mm deep

12 Cut down to the 115mm diameter pencil line around the circumference of the foot

13 Extend the pencil lines from the bottom of the foot to the front face of the foot to where the claws will be located

14 For the knuckle of the toe, start by freehand drawing in the upper section of the lion's foot

15 Using a mallet and No.2, 12mm and No.5, 8mm carving gouges, stab cut around the claws and toes

16 To remove the waste wood at the heel of the foot, draw a line 50mm up from the bottom of the foot

17 Use a No.2, 20mm gouge upside down to shape the bottom of the ball by following along the 100mm diameter circle

Carving the claws

On the side of the foot where the thumb claw is located, draw in the arch of the thumb approximately 12mm higher than the heel. Then use No.3, 16mm and No.5, 16mm carving gouges to remove the waste wood. Shape the ball by using a No.2, 12mm upside down and carving in deeper into the ball up by the foot. On the opposite side of the thumb there is more open space with a larger arch. Again, here you will need to draw in the arch freehand. Try to blend the front toe into the heel. Leave the heel lower to give the appearance that the lion's weight is resting on his heel. Use a No.3, 16mm and a No.2, 20mm to remove the waste wood by stab cutting along the pencil line. Then relief cut up to the stab cut.

To carve the toes and claws of the lion's foot, keep stab cutting into the ball around each toe, knuckle and claw, and shape them by using the gouges upside down. It is very important to carve deeper into the ball by the knuckle giving it its rounded shape and at the tip of the claw leaving the largest diameter.

Use a No.9, 3mm carving gouge to begin shaping the knuckles and carve a small radius between each knuckle down into the ball. Use a No.3, 12mm and a No.5, 12mm carving gouge upside down to round and shape the radius corners of each knuckle.

When carving the claw, keep in mind that the shape is wider at the top and thinner towards the tip. There is also an arch on the front of the claw which helps give the appearance that it is grabbing the ball. Use a No.3, 8mm carving gouge to carve close to the claw's finished size.

Use a No.2, 5mm gouge to shape the tip of each claw, carving them so that it looks like the claws are gripping the ball.

To start shaping the upper section, use a No.9, 10mm gouge with a wider cut at the knuckle, changing to a narrower cut as you carve up the ankle section.

To give the claws clean, sharp details, you need to stab cut into each toe at the upper radius of the claw using a No.2, 5mm and a No.3, 5mm gouge.

Then with a No.2, 8mm gouge cut a clean line between the claw and toe and shape the lower section of the toe by cleaning and blending up the carving gouge marks. You now need to repeat step 25 on all five claws, toes and knuckles. Use a No.2, 20mm carving gouge upside down to shape the round part of the ball. Also at this time I round over both sides of the thumb and the opposing toe and knuckle back towards the heel using No.3, 16mm and No.5, 16mm gouges.

To clean up the detailing of the lion's foot, stab cut around each toe and claw. Lightly tap the gouge with a mallet. Then, using No.2, 8mm; No.2, 10mm; No.2, 12mm and No.2, 20mm carving gouges upside down, carve up to the stab cuts all around the lion's foot. You will need to rotate the carving gouges to match up to the profiles.

The thumb arch of the lion's foot is set back with a larger spacing. Use a No.8, 4mm gouge to carve into the arch to get the shape between the thumb and toe. Then, with a No.3, 12mm gouge, smooth carve out all the gouge cuts and marks.

Use a No.9, 3mm carving gouge to clean up between the knuckles of the foot section, making sure the ball and knuckle are cut clean to each other. To do the very last touch ups to the carved cabriole leg, shape and clean up any gouge marks using all the gouges used throughout this section. The last steps are the carving and finishing, then your carved ball and claw foot is complete.

18 On the side of the foot, draw in the arch of the thumb approximately 12mm higher than the heel

19 To carve the toes and claws of the lion's foot, keep stab cutting into the ball around each toe, knuckle and claw

20 Begin shaping the knuckles and carve a small radius between each knuckle down into the ball

21 You can then round and shape the radius corners of each knuckle

22 When carving the claw, keep in mind that the shape is wider at the top and thinner towards the tip

23 Use a No.2, 5mm gouge to shape the tip of each claw

24 You can then start shaping the upper section

25 Stab cut into each toe at the upper radius of the claw

26 Cut a clean line between the claw and toe and shape the lower section of the toe

27 Begin to shape the round part of the ball

Top tips

1. The cabriole leg sits at a 45° angle facing outwards to the corner of the table top. Adding 12mm to your template will give the extra wood needed for carving in the details. The side profile can be misleading to what the actual size needs to be

2. Mark on one side of the long edges with a 'V'; this will allow you to keep track of matching up the grain

3. See page 13 for details of Auriou's Chris Pye basic woodcarving tools

28 Clean up the detailing of the lion's foot

29 Carve up to the stab cuts all around the lion's foot

30 Use a No.8, 4mm gouge to carve into the arch to get the shape between the thumb and toe

31 Use a No.9, 3mm carving gouge to clean up between the knuckles of the foot section

32 Touch up the carved cabriole leg, shape and clean up any gouge marks

33 The finished leg *F&C*

Our correspondent...

PHOTOGRAPHS BY KIERAN BINNIE

"But this is the way we've always done it..."

Gluing a spruce centre strip to Indian rosewood using go bars for a 12-string acoustic guitar build

Over the years *F&C* has acquired readers from all four points on the compass and since going digital in 2013, that trend has increased. You can find us anywhere in the world with a link to the web.

As the content of the magazine is a true reflection of our readership, we've decided to introduce a new style of article that will take us on a workshop tour of the globe. Our reporter this month is luthier Kieran Binnie who wrote for us about parallel skills in issue 227.

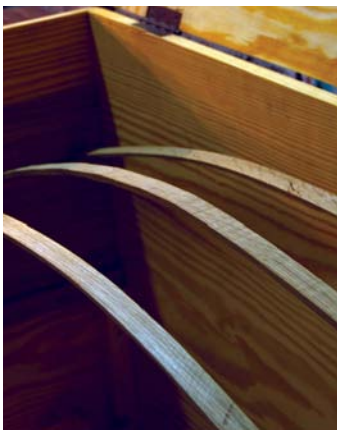
Kieran Binnie explains how furniture makers may benefit from learning lutherie techniques

All crafts have specific ways in which to carry out certain tasks, based on tradition and the tools and techniques commonly available, and in my last article – issue 227 – I discussed the benefits of looking outside our usual projects to take advantage of the problem-solving and techniques found in other disciplines. As a luthier by training who has now embarked on learning the joiner's craft, I mentioned a couple of lutherie techniques that can be equally useful for furniture building. Since the article was published, several people asked about the lutherie techniques I touched upon. Here I'll explain why what may seem like specialist techniques for a niche craft have wider applications.

Go bars – reaching the spots other clamps can't

Go bars are the luthier's secret weapon and provide a versatile clamping system when precise pressure is needed. Essentially, strips of strong and flexible wood are bent into a space too small for them, so that the pressure is transferred into the components being clamped. The most obvious use

Cedrela braces on red gum back for a 19th-century parlour guitar build, glued with go bars



Using go bars to glue oak runners to the inside of a southern yellow pine carcass

Go bars prevent the carcass side from deflecting under the weight of the plane

of go bars in the luthier's workshop is gluing internal braces to acoustic guitar soundboards and backs, as the clamping force needs to be applied along the full length of a brace while the workpiece is held in a cradle matching the radius of the curved braces.

Go bars can be used for a great number of tasks, and furniture makers can also take advantage of the ability to provide clamping pressure to areas where traditional clamps will not reach. For example, when gluing runners or other internal fittings to a carcass, using go bars will allow you to glue up without the use of either clamps, nails or screws – thanks to Derek Jones for this tip!

Equally, when planing the outside of a carcass flat, the weight of a plane can cause deflection, preventing the plane from reaching the middle part of the panel. Placing several go bars inside the carcass will support the panel and make flattening and smoothing external faces significantly easier.

If you want to make use of go bars for more traditional clamping tasks, then you will need a go bar deck. This can be as simple as you like, and is in essence a base and a ceiling between which the over-long go bars are fitted. The workshop where I trained built the go bar deck so that the bars pressed against the shop ceiling. In contrast, my current deck is portable, with an adjustable ceiling made of four layers of 25mm-thick plywood glued together and supported above a deck of the same quantity of plywood by locking nuts on 20mm diameter steel rod at each corner. The workpiece is placed on the deck, the ceiling adjusted to the correct height, and bars of oak (*Quercus spp.*) bent at the points where clamping force is required. The go bars I use are generally made of oak, 20mm wide and 3mm thick, but other species of hardwood will suffice.

Jointing thin panels

Jointing edges for glue-up is a familiar task for all woodworkers. Plane both edges flat and square, apply glue and clamp up. Easy. And for work of the typical thicknesses encountered in most furniture builds this is all it takes. But if you need to joint very thin boards, of say, 5mm – the typical starting thickness of timber for an acoustic guitar soundboard – then the work is likely to spring out of the clamps as you apply pressure. Similarly, the thin reference surface makes balancing the plane in a constant orientation to the edge tricky.

Many people seem to view long grain shooting boards as training wheels for novice woodworkers, but for jointing thin stock the long grain shooting board is invaluable as it holds the thin edge in a constant orientation to the plane.

With the edges jointed, we come to one of the key jigs in my workshop; the soundboard gluing jig. An article on building this jig will be featured in *F&C* later this year – but put simply, the jig is comprised of a 25mm-thick plywood deck, and two hardwood beams sized 75 x 60mm. One beam is fixed at the edge of the deck, while the other is held with bolts that move along slots routed through the deck. The jointed work is placed on the deck and butted up against the fixed beam, and the movable beam close to, but not touching, the edge of the work. Once the joint has been glued, clamping force is applied by inserting hardwood wedges in the gap between the movable beam and the work, through the slotted deck. Each half of the work is then clamped to the deck to prevent it springing out.

Because the wedges slide through the slotted deck until they catch on the work, the outside edges of the workpiece do not need to be parallel to the gluing surface, or even straight. This jig therefore allows irregular-shaped timber to be glued without any issues, as well as wedge-shaped work where thin outside edges are presented to the clamps.

Sharing information, growing parallel skills

The more traditional joinery I do the more I discover techniques that improve my lutherie, and I hope that the lutherie techniques discussed in this article will prove useful in your joinery and furniture making. If any readers have other techniques that would be of use in different disciplines, please do let me know – let's share our knowledge and grow each other's parallel skills. F&C

A simply made jig makes gluing thin panels straightforward

Here, oak wedges provide clamping pressure for gluing these bookmatched yellow cedar panels

The multi-talented Jack of all trades

Anne Briggs Bohnett investigates the plane that is at the heart of every workshop

The Jack plane is hands down my favourite hand tool. Its name is rumoured to have come from the popular saying 'Jack of all trades', which is exactly what this plane is. Every woodworker needs to have a Jack plane in their arsenal, even if every other tool they own comes with a power cord. In a traditional hand tool progression of work, rough stock would be dimensioned to size and roughly to square using the scrub plane, followed by the Jack, and then the jointer and smoother. However, in a pinch, the modern metal Jack plane can actually accomplish all of the above tasks.

With the frog set back to open the mouth of the plane, one could insert a heavily cambered blade – the bevel of the blade is ground at an arc to look like a beaming smile – into the Jack body, advance the blade far forward to take a heavy cut, and voila! the Jack is a scrub. If one were to replace the heavily cambered blade with a slightly less cambered blade – a smirk – retract it slightly and move the frog forward, then the Jack is back to its original form and function. Then, with the frog advanced even further forward to close up the mouth of the plane and the cambered blade replaced with a square ground blade – a stern gaze – it could pinch hit for a jointer or a smoother. Also worthy of mention here is the fact that a Jack plane with a square blade is an ideal candidate for use with a shooting board to square up end grain.

PHOTOGRAPHS COURTESY OF ANNE BRIGGS BOHNETT & ADAM BOHNETT

Plenty to choose from

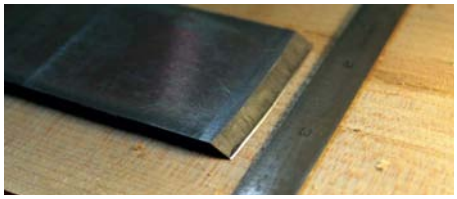
However, for the purposes of this article, let's focus on the Jack in its 'intended' state. Planes ranging from 305-430mm usually fall into the 'Jack plane' category. The Jack plane comes in many forms, be they the chunky wooden versions of days gone by, Chinese and Japanese wood planes that operate on the pull stroke, the sleek wooden push models offered by boutique makers like Crown Plane, Scott Meeks and Caleb James today and the metal bodied No.5 – using the standard Stanley numbering system, which most subsequent plane makers also adopted – offered in vintage varieties by Stanley, Bailey, Sargeant, Millers Falls and others. Makers of the more modern variety ductile iron-bodied planes, such as Lee Valley and Lie-Nielsen also make very high-quality Jack planes that work fantastically right out of the box.

As previously mentioned, the blade on a Jack plane should be slightly cambered. This can be achieved by putting added pressure on the sides when honing the bevel side of the blade on your sharpening stones, first on one corner, then the other. This process is made much simpler by using a honing guide, which will hold the bevel at the proper angle while you hone along the arc.

Vintage Jack, wooden Jack and a bevel up Jack

Grinding the camber

Honing the bevel



Cambered blade

To use the Jack plane

So, how do you use the thing? Volumes can – and have – been written about this topic, by craftsmen far more experienced than I, so I will give a quick recap and then let you get to practising in your own 'shop.

Hand planing is an activity where most of the strength comes from your core, not your arms. Set your non-dominant foot slightly forward with your dominant hand on the rear handle of the plane. Hand and feet should mirror one another wether you're left- or right-handed. You always want to maximize the amount of contact – registration – with the sole of the plane and the workpiece to achieve even downward pressure through the plane where the blade is cutting.

As you begin your cut, focus your pressure on the front of the plane, then as you advance forward, transfer to the middle, and as you leave the cut, switch to the back of the plane. Your body should reflect this shift so focus rocking back and forth with your feet planted firmly as you lean into the cut and follow through to the end of the cut in one fluid motion. If you can't push the plane through the cut and you know the blade is sharp, then you have your blade set too deeply. If it's not cutting at all, you need to advance your blade forward in small increments. Practise noticing the change in feeling as the blade dulls so you can keep your plane sharp.

Tool care

When in use, periodically adding wax to the bottom of the plane will help reduce friction against the wood as well as add another layer of protection over time for the sole of your plane against rust. Before I put planes away, I use the air gun on my compressor to blow out any residual dust or chips from the plane, then I give the whole plane a wipe with a microfibre cloth and a dab of jojoba oil, checking for hidden wood chips lodged in the mouth or in the chipbreaker before I put it away

1 Traversing a board at 45° with the Jack plane to identify and remove high spots

When prepping a rough-sawn timber, start by planing at 45° across the board – sometimes called traversing – first in one direction then the other until you are taking a full shaving with each pass. Focus on the high spots and be careful to avoid any low spots until you've planed the entire surface down to their level. If your workpiece is rocking, place shims under the high spots so your plane can register with even pressure across the board.

Next, begin planing in the direction of the grain, typically along the length of the board, from one side to the next with your plane slightly skewed at 10 or 15° – until you've removed the marks from planing at 45° and are again taking a full shaving with each stroke. Check regularly for high or low points. Mark them with a pencil and when the marks are planed away, check again. When you are taking a full shaving along the length of the board, it should be flat and ready for smoothing. Some great tools to have on hand for this process are a pair of winding sticks, a quality straightedge and a double square.

2 Slightly skew the plane and work in the direction of the grain

The Community Tool Chest

Frank's Vintage No.5

Crown plane wooden Jack

Veritas bevel-up Jack

An arsenal of tools with a story

The Community Tool Chest currently has three Jack planes in it, each with their own special story and purpose. The first is a vintage Stanley No.5 and is one of my most treasured possessions because it was a gift from my dear friend Frank, a local woodworker who I've adopted as a surrogate grandfather, whether he likes it or not. He is actually the originator of the theme of my website, 'Anne of All Trades'. For the last three years, he has been encouraging me to learn every life skill possible and to preserve disappearing life skills. He is an incredible woodworker who has been producing masterpieces out of his workshop for 60 years. When I first asked him if he would spend some time teaching me some of the lessons he'd learned, I was shocked: he said he was grateful I'd asked. I was the first person who'd ever asked him to give lessons and had it not been for my asking, 60 years worth of woodworking knowledge would have died with him. Frank is 93 going on 25. He and I spend at least one afternoon a week together working on various projects, ranging from lathe work to installing irrigation in the yard to building a moped from scraps. I could write a book about him, but for the purposes of this article, I will say that this plane was given to him by an uncle and then he gave it to me. Someday I hope to give it to one of my grandchildren and I'll tell them all kinds of stories about my good buddy Frank. A twin to this vintage plane could likely be had at a flea market for about £10, but with a little clean up and a fresh blade from Hock Tools, it is easily worth 10 times that price, but the story and relationship that accompanies mine is priceless.

The second is a beautiful wooden Jack plane donated to the CTC by Jim 'the tattooed woodworker' at Crown Plane. Jim and I met about a year ago on Instagram and I was very excited to be able to add one of his planes to the CTC after I'd had a chance to test a few out at Woodworking in America '14. Because of a small cosmetic flaw Jim was able to fix with an ebony *(Diospyros spp.)* plug, the plane had 'character', preventing it from being sold but it works like an absolute charm for purposes of the CTC. When it arrived, I went to touch the blade up on my stones before use and was shocked that the blade back was absolutely 100% dead flat right out of the box. That saved me a good half an hour in setting the plane up and I was immediately hooked. While I am still not totally used to the lack of mechanical features found on a metal plane, my arms and back thank me when I choose to use this much lighter wooden plane to do big jobs. The chips escape the plane easily, the blade holds a fantastic edge and once you get the hang of getting the blade set, this is a really sweet plane for a very reasonable price. At the end of the year, this plane and the other tools donated outright to the CTC will be given to a young woodworker as part of the CTC scholarship programme.

The third Jack in the Community Tool Chest is my Veritas bevel-up Jack plane. This is one of the first new planes that I ever purchased, and, if a woodworker were to only own one plane – but that sounds like a horrible way to live – then this would have to be it. Having been a frequent Lee Valley customer and having had the chance to spend some time with Robin Lee, the president of Lee Valley tools as well as many other key members of the Lee Valley team, I cannot recommend this company highly enough. Mr. Lee is passionate about getting the best quality tools affordably into the hands of woodworkers as well as using constant innovation to improve time tested designs. Their customer service is unmatched. But back to the plane. I love the versatility of my Lee Valley bevel-up Jack plane. I can open or close the mouth simply by loosening the front knob with hand pressure, the blade is thick, which reduces chatter – vibration while cutting – there are set screws in the sides of the plane so I can remove the blade for a quick sharpen without losing my setting and the bevel-up feature is fantastic when it comes to planing end grain, using the shooting board and dealing with figured maple (*Acer saccharum*), the main staple in my Pacific Northwest 'shop.

Don't have a workbench? No problem!

A plane stop used with a batten is as good as any vice

Clamp a scrap piece of timber to the edge of any work surface and voila! A plane stop! Not enough holding power? Simply cut an angled notch in a second scrap and clamp that to the surface against the opposing edge. This is called a batten and there is plenty of free information about them online. F&C

PHOTOGRAPHS: ROY SCHACK

One of Roy's students, Will, buffing and rubbing with a natural bristle brush

Finishing with soap

Roy Schack comes clean about the soap finish and why it is durable, easy to apply and serviceable

For 18 of the last 20 years, I've learnt to work well with urethane-based oil finishes, both the wipe on/wipe/off 'in wood' variety as well as the lay on oils. The former I have used a lot for cabinets and non-utility surfaces, while the latter have been used for dining tabletops and surfaces that will cop a bit more abuse. Both of these styles of finish have served me well, leaving a lovely satin lustre and a beautiful pop of colour in the wood. They have also left me with layers of melted gloves – both latex and nitrile – and no matter how well-ventilated my work area was, a chest that felt like it was on fire. On top of all of this, I have never rested comfortably knowing of the possibilities of spontaneous combustion of forgotten oil rags. For these reasons, I've always been on the lookout for a better solution.

A simple method

In 1981, on my first solo return to Denmark as a 16-year-old, I recalled seeing my Aunt diligently washing down her oak *(Quercus spp.)* dining table with soap and water. For some reason, seeing this process has stayed with me. I recall her saying that it was just one of those jobs she did every year. I remember the timber top having the softest, silkiest feeling, similar to that of driftwood, left to the elements, worn over years by wind water and sand. I remember her satisfaction as she wiped it down, watching all of the spots just disappear and letting it dry naturally, ready for another year's service.

Soap finish is as simple as that. No more, no less. The surface left behind is, visually, to all intents and purposes, a raw surface. The wood is left with an utterly matte appearance. Aesthetically, the soap works best on blonde timbers, such as ash (*Fraxinus excelsior*), oak, pine (*Pinus spp.*) and maple (*Acer campestre*). On darker woods, there is a noticeable lightening of colour, more from the soap residue than anything else. Blonde timbers usually take on a yellow appearance with poly-based oils; however, with soap the colour remains largely unchanged from that of a freshly planed or sanded surface.

Equating quality with shine

Something I've learnt during my time as a maker is that in the same manner that people sometimes equate value with size, they equate quality with shine. In certain respects, both of these assumptions can be true, but not always. Some pieces scream out to have a beautiful gloss finish on them, while others benefit from a more austere approach in their design and finish. This can be a discussion for another time, but it works well for me, the notion that simple, clean design benefits from simple clean finish – no pun intended.

A soap finish defies the assumption that shine equates to quality. It is a utilitarian finish that has the ability to repel most dirt and grime – wine stains, coffee stains and even beetroot stains. Its only sin is that it is not shiny and that it requires a fairly simple maintenance regime.

Kitchen worktops, dining tabletops and chairs all work well under soap. If they get soiled, it is simply a matter of wiping down with a warm damp cloth. If the stain isn't removed immediately, a solution of soap in warm water and light scouring with a nylon scouring pad or brush should do the trick.

The process

A couple of years ago I decided to bite the bullet and incorporate soap into my making world. I'd had the luxury of having a young Danish architect/woodworker spending some time in my workshop, so, as you do, I had him show me the basics.

Pure soap flakes

After sanding your work to the desired grit, the first thing you need is pure soap flakes. In Australia, we are still able to buy pure soap flakes at the supermarket under the label Lux, made by Pental Products. They are slightly perfumed and your work will smell like sunshine. I don't find this an issue. Another supplier is Herbon – www.herbon.com.au – who will look at international orders on an individual basis and www.soap-flakes.com is also a good source for pure soap flakes.

Mixing the solution

My method of making the solution is to add a healthy palm full of soap flakes – about 1/4-1/3 of a cup – to about 500ml of hot water. The flakes are swizzled in the water with a brush to help them dissolve and to create a nice level of foam. When the water has cooled to the touch, the solution is washed into the surface with either a cloth or a nylon scouring pad. I like the solution a bit on the runny side so the soap is carried well into the cellular structure of the wood. I let the soapy solution sit on the surface for a very short minute, before wiping away with a damp cloth. By this stage, the soap will have infiltrated the wood fibres, started the process of solidifying and being a surfactant, started working its magic below the surface, thus effectively creating a barrier to dirt and stains.

Solidification

The fats in the pure soap flakes, when dissolved in warm water, begin to slowly solidify again, with the solution starting to resemble somewhat of a jellyfish. This is one of the reasons it works so well. This solidification acts as a barrier in the tubular structure of wood and helps in repelling stains and grime. Your standard dishwashing liquid or laundry detergent doesn't harden like this.

The necessary ingredients. Note the lack of nylon or latex gloves. Pure soap is pretty safe to touch

The brush is a nice tool to create a good froth and to help dissolve the soap flakes in the hot water

The soap solution can then simply be applied by either cloth or nylon scourer

When the dissolved soap fats start to solidify again, they turn into this gelatinous slime mass

Important points

There are a couple of important points to be aware of at this stage. The first is that any end grain should only receive a cursory wipe down. If it receives too much soap, the caustic nature of the soap will dissolve the natural oils in the wood, causing the end grain to dry and split. On average, I would apply 4-6 coats on top and bottom of long grain surfaces, such as tabletops to one coat on end grain. Secondly, during the scrubbing process it is inevitable that the foam will drip over the edges. If these edge drips aren't wiped away at the same time as the foam on the horizontal surface, they can form 'ghosts' in the wood – little dark patches. I can't stress enough the importance of wiping down all surfaces shortly after application.

It's crucial to wipe off the ghosts from the edges as the soap is being applied. They will leave burn marks if left too long. The end grain only receives a cursory swipe with the soap

Re-soaping

After being wiped down, I find the surface takes very little time to dry. However, due to latent moisture below the surface, I generally leave the furniture between half to one day before re-soaping. Chances are, as a result of the water in the solution, the grain will have raised. I deal with this simply by re-sanding with 240 grit paper or a nylon scouring pad. Nylon scourers are preferred over steel wool to avoid metal taint in the wood. I always mix up a fresh batch of soap for each round of soaping, as the slimy nature of solidifying soap makes it difficult to work with.

As hinted earlier, there is a need to maintain a soap finish to ensure its protective nature remains intact. It really is as simple as giving the surface a yearly washing – or more frequent if you wish. The surface it creates is silky and velvety and after a light sand and buff down with a dry cloth or natural bristle brush, this sensation becomes even more luxurious.

These four photos show a sequence of soiling and cleaning with two of life's essentials and some beetroot. The wine, coffee and beetroot all washed out with no problem

There is residual stain after being wiped down with a damp cloth

A quick scour with some soap removes this

After a few minutes, the surface has dried off and all evidence is gone

The matte surface left behind can be buffed up a bit with a dry cloth, as well as a natural bristle brush. This removes the pith and creates nice texture

Conclusions

Soap is quite durable. It just doesn't have that protective impact layer that a two-pack or lacquered finish might have. However, soap is more serviceable. Repairing damage to a piece that has a soap finish is much easier. Scratches can easily be sanded out and dents can be steamed out, sanded and re-soaped. Simple really. I like that. F&C

PHOTOGRAPHS COURTESY OF JOSEPH WALSH

Free-form sculpture

Robert Ingham meets large-scale lamination expert Joseph Walsh and finds out more about his amazing feat of free-form sculpture, the 'Magnus Celestii' desk

From his interest in cabinetmaking in his teens as a self-taught craftsman to his international reputation as an artist craftsman, Joseph Walsh's entrepreneurial zeal has played a large part in his success in the field of expressive sculptural furniture. In his early 20s he had established a workshop on his father's farm near Kinsale in Ireland. His work at that time, like many makers of his age, was quite derivative, being influenced by John Makepeace and Wendel Castle.

The Irish design scene

He made a big impact on Irish design and was supported by the Irish Crafts Council who backed his wish to organise exhibitions, which included his fellow designer makers. The Crafts Council featured his work at SOFA – Sculptural Objects and Functional Art – in Chicago where he made contact with influential American collectors, which in turn led to being invited to exhibit his work through the American Irish Association in New York. As a result, he soon began to see his work being shown at galleries in New York, London, Basle, Paris and Milan, which has established his international reputation.

An international team

He has taken large business risks to further his career, among which is the employment of a team of international craftsmen from Japan, France, Portugal, Britain and Ireland, who bring an exciting mix of skills and enthusiasm to their pieces. About 10 years ago, he asked me if I would be interested in getting involved with workshop training to help bring the diversity of skills and background into focus with the type of work that was evolving. Being self-taught, his hands-on knowledge at the bench echoed his passion for making things, but his theoretical technical knowledge needed to be expanded to match the vision of the progress that was lurking in the future. I am pleased to say that the experience was very enjoyable and the reciprocity of our work and attitude has been very worthwhile.

'Magnus Celestii'

Joseph was always interested in sculptural forms, which he combined very successfully with function. He used stack laminating to create the bulk from which the form could be shaped and layered laminating for flowing natural shapes. As his vision, which is stimulated by nature and the landscape, became more observant, he experimented with free-form laminating and developed a technique which exploited vacuum bags to apply the pressure. As the skill of his team of craftsmen improved, so did the size of the pieces. He was invited last year to design and make a piece for an exhibition at the Artist House in Roche Court, near Salisbury. The gallery offered him a room, which was quite large so he decided to make a desk that swept up from the middle of the floor and swung round

in a continuous curve towards the ceiling, terminating in a shelf along one wall. The piece is called 'Magnus Celestii', which in Latin means 'Great Heavens'.

Making the desk

The sheer scale of this piece is enormous. From hand-drawn sketches to photo-realistic images in CAD, the design evolved progressively. In addition to good two-dimensional representation, Joseph has refined the method of making scale models, which gives him an opportunity to experiment with the construction that will be applied to the full-size piece. These are made from veneers, which can be bent and held in place while the glue sets. He also uses the models to present the design to the customer.

During the process of development, Joseph and the team used the experience that they had accumulated in collaboration with other experts. The piece was so large that it had to be fixed to the floor and the wall. For structural and safety reasons, they consulted Arup Associates, the renowned architectural company, to help them resolve these aspects of the construction.

The base of the desk was fixed to a metal structure that was underneath a plinth. Junctions were designed to connect

The desk in situ at the Artist House in Roche Court, near Salisbury

The 'Magnus Celestii' desk

the curved components along the length of the sweep as these dimensions were limited by the size of veneers that were available. The timber chosen was olive ash *(Fraxinus excelsior)*, which was sliced into constructional veneers by a specialist French company. A lot of time and care was taken to make sure that the composition of the grain of the veneers would play a striking part in the visual aesthetics of the finished piece.

The base and working surface of the desk was laminated with a massive two-part mould. The glue that was used is a two-part urea formaldehyde resin, which has a long open assembly time, but it still required three craftsmen to apply the glue with large reservoir spreaders to coat each section of the construction.

The sculptural shape and flow of the curves was formed by removing the bulk of the wood with handheld power tools, but the final surface was achieved with hand tools, such as spokeshaves and handheld sanding blocks. This can be attributed to the skill and hand-eye coordination that the craftsmen have developed and the huge contribution it makes to the unique quality of the finished piece.

Once the individual components had been laminated, they were put together temporarily and held in place with a complex jig that was developed during the dry run to make sure that the components would fit together when the glue would be applied.

The main sweeping curve is sub-divided into layers with spaces between them and these were eventually glued together with blocks held in place with F-clamps. The piece was finally finished with white oil. Two seats, made from Irish marble, were carved by a visiting Portuguese sculptor who works in collaboration with Joseph.

Various pieces of the desk in the laminating stages

Members of the team using rollers to spread glue on the huge laminated pieces

Aerial view of the desk construction

The desk, showing all the laminations clamped up

The complexity and scale of the project is quite mind-blowing

Transporting the desk

Transporting 'Magnus Celestii' to Roche Court was the next challenge. After the photo shoot at the studio, it was dismantled and wrapped in foam before it was placed into the van that transported it to the UK. Joseph and three members of the team accompanied it to the site and assembled it with care and passion and it was there for six months so that many enthusiastic visitors could enjoy seeing it and experience its splendour.

You can see Joseph's work at the 'Make Yourself Comfortable at Chatsworth' exhibition, which takes place until 23 October, at Chatsworth House, Bakewell, Derbyshire. F&C

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PHOTOGRAPHS BY RICHARD COOPER

Two of the chairs after polishing and ready for the upholstery

There's no such thing as a quick fix

Richard Cooper goes all out to revive a set of Victorian dining chairs

For a restorer, one of the most common jobs is to repair chair joints that have worked loose. This can be a quick and easy job but, in some cases, things can be more complex. A dining chair with a drop-in or screwed-on seat that can be removed, simply needs the joints tapped apart, the old glue cleaned off with warm water, re-glued and clamped. Usually the only joints that need attention are the side rails to the back stiles and the front legs. For old chairs, pearl glue – also called animal or scotch glue – should be used as this will adhere to any traces of the original glue. Even for a more modern chair, I tend to use animal glue as it holds better to a joint that had previously been glued with a modern PVA-type adhesive. It is also easier to remove and re-glue next time. Modern glues, once cured, do not stick as well to a fresh application of the same type.

A quick fix

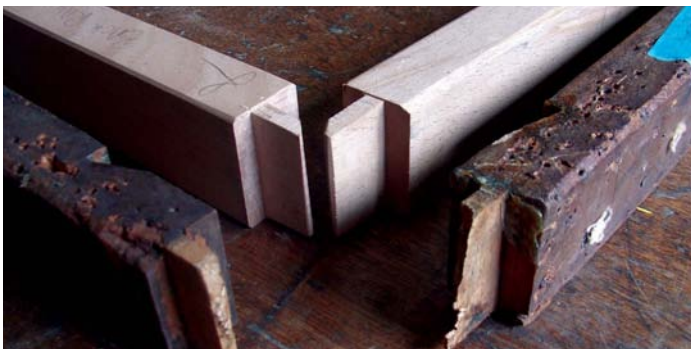
The type of chair that has upholstery fixed to the rails and legs has to have this removed so the joints can be worked apart. As this is a time-consuming and difficult job, many chairs have had a quick DIY repair using various combinations of screws, nails, dowels and metal plates. These may keep the chair in one piece for a while but eventually a proper repair has to be done. This can now turn out to be a complex procedure as the quick repair has caused damage to the joints and the surrounding wood.

Design obsolescence

Apart from the joints, another problem that often leads to a repair is the design of the chair. An attractive design often involves curved rails, carved backs and turned sections. Designers, past and present, sometimes underestimate the public's determination to break a chair. A typical problem is the balloon back Victorian chair where the curved back is dowelled to the uprights. Where the dowel ends is about level with the short grain of the curved top; someone leaning back heavily or the chair falling backwards results in the wood splitting. Turned legs that may look sturdy often have a thin section close to the rails, which can fracture. Both these repairs can be carried out successfully by an experienced restorer and by demonstrating the latter in this article I hope you'll agree that to do the job properly, a quick fix is simply out of the question. Unfortunately economics can also play a part in the decision to carry out a repair and in some cases, the cost will be greater than the chair's value.

Woodworm damage

In my experience the third most common cause of a chair breaking is damage by woodworm and in a few cases by dogs chewing legs and stretchers. The beetle larvae often go for the seat rails where they join the legs, especially where the rails are beech (*Fagus sylvatica*) and the show wood is mahogany (*Khaya ivorensis*) or oak (*Quercus spp.*). Replacement rails can be made if the damage is extensive. In some cases, where the woodworm have not weakened the wood too much, a re-glue of the joints and then careful use keeps the chair usable. In modern heated homes, the wood is usually too dry for their liking so the damage is likely to have been done decades ago; however, it's worth treating the wood and looking out for the exit dust when the beetles emerge in spring.



New back and side rails, showing the longer tenons compared to the damaged original ones

Replacing components

The set of eight chairs in this article had all these problems – some to a greater extent than others. As the upholstery was worn out this was removed with some of the stuffing being reused. The chairs with loose joints could be re-glued; however, most needed considerably more work. In four of them, the back stiles had snapped at the turning just above the seat rails. In two of them, a repair had been done by drilling a 12mm hole in the broken parts and inserting a metal rod and drilling through this so a bolt could keep the parts together.

The metal rod had gone through the tenons, removing over half the length. The resulting loose joint then had a few nails hammered in. It was therefore impossible to repair these parts so I had to replace the stiles and the side and back rails. The weakened back uprights had also caused the tenons on some of the carved crest rail and lower rail to snap. These could be repaired by splicing in new wood. The upholstery tacks had caused some of the parts of the back to split; this was repaired by cutting back to sound wood and gluing new wood in. I used Titebond glue for this and the tenon repairs as it was a fresh cut and not an original joint.

Making a mortise

For the chairs that needed new stiles and rails, I used a system for making the mortise that I have previously used when making whole new chairs. This involves routing the mortise with the cutter tilted. The tenon on the rail is then made as for a 90° mortise but with angled shoulders, corresponding to the angle of the mortise. This is the way the joint has been made for centuries and has proved to be long lasting.

An alternative way is sometimes used by factory produced chairs where the mortise is at 90° and the tenon is angled to give the splay from the legs. The photo shows a broken side rail removed from a newish chair that has the angled tenon on one end and the stump of the other tenon on the other end. This had failed as the grain of the tenon runs at an angle to the glued surface. The glue had held up, leaving the remains of the tenon firmly in the mortise.

Before dismantling the chairs a note was made of the angle that each rail made with the back rail so a replacement would have the same splay. This angle varied on each chair and even from each side. The variation was from 93-99°, which could be due to different makers or the one maker cutting the mortise by eye rather than using a jig or guide. Fortunately, I had the necessary router fittings from previous jobs. You can fashion these quite simply out of a single block or alternatively, create separate components and attach them to your router fence as required.

A rail from a factory-made chair with the tenons angled. The tenon on the right has broken along the grain

A hole is drilled to allow the cutter to go through. A long shank cutter has to be used as the mortise needs to be at least 30mm deep. I have a Trend 8mm cutter with an extra long shank that does the job. The same setup would be used on the front legs but with the fence running on the other corner of the leg. When marking out the position of the tenon on the front leg for the side rail, remember that it is usual for the front leg to have the side face angled to follow the side rail but the mortise is made while the leg is still square.

Cutting the mortise with the angled attachment to the router fence

Making templates

The back leg, or stile, of these chairs has a slight rake just above the seat rail. Using one of the good ones as a pattern I made a card template to position the mortises. While the blank is still square, the mortises can be cut. The stile is turned on the lathe both above and below the seat but the rake means that two sets of centres have to be used: one set for below the seat and one set for above. These were found by extending the centreline of each part to the other end of the stile. The prepared blank has the position for the two centres and the square section starting about 60mm from the end.

To turn the leg section the centres are changed over and a balancer is attached to the top part

Switching the lathe on, even at a slow speed, results in a dangerous amount of vibration. To balance the leg, a wedge of wood has to be attached to the end not being turned. For the leg end, this was screwed to the part where the seat mortises are, later being covered by the corner block and the other end screwed to the end of the blank that is removed. When the turning centres are changed for the other pair, the balancing wedge is screwed to the end of the blank and held in place with a bicycle inner tube. The leg was sanded up to 180 grit, then wetted with hot water to raise the grain, then sanded up to 240 grit. Each stile has the front face of the mortise square carved by a professional woodcarver.

The side rail

The depth of the seat rails is usually around 60-65mm; this allows for an adequate mortise size for the back joints. If a rail is less than this it would be wise to consider adding a stretcher to each side. For a drop-in seat the rails can be around 18-22mm thick; for chairs where the upholstery is tacked to the rails, 30mm is needed. A chair needs to be fairly light to lift and move but reducing the thickness of the parts by too much will weaken it. The height of the tenon at the back is the same as the rail but on the front leg should be about two-thirds. The exception to this would be if the leg extended above the seat to form an arm support. The eight chairs being repaired here had some of the seat rails in oak and some in beech. Usually rails that have upholstery tacked to them should be in beech as it holds tacks better and does not split like oak. Beech was used for the replacements and some of the original oak rails that were not too damaged had about 5mm of the split top surface removed and a beech facing glued on.

Everything ready for assembly. The original carved parts have a 'V' cut in the tenons, possibly done by the carver for some sort of holding jig

Making the top finials

After the carving was done, the turning centres were cut off and holes drilled for the top finials and the dowel that holds the X-stretcher. I had to copy the measurements of the existing chairs but when I have made a chair to a new design, I generally follow the tried and tested ways. The angle of the side rails to the front and back that gives the splay to the chair seat is usually about 7°. A full-size drawing for the seat plan will give the angle if the front and back widths are known. Deciding on the thickness of the legs and rails, I start with the thickness of the mortise and tenon. Using the 8mm cutter gives the minimum but this can be larger by adjusting the router fence for a second pass or using a 10mm cutter. Just over 8mm seems to be common on old chairs; 10mm is about the maximum unless the legs are very thick. I work out the size for the legs by using the rule of taking the tenon thickness, multiplying by three and as there are two mortises, adding 50%. A 9mm tenon would be 9 × 3 = 27 + 50% = 40.5mm. The chairs being repaired here had legs 42mm square. This can be varied but not by too much and consideration should be given to the type of wood used. Whatever wood is used, it should be examined carefully to find straight grain along the length. Square-edged timber does not always follow the grain, so marking out on the board is better than just following the edge.

Test fitting the stiles and rails before turning

Fitting components

The usual test fittings confirmed that all the new parts went together. The back section was glued first, then the front legs to the front rail. When dry, the front and back were connected by the side rails and the X-stretcher placed over the dowel ends of the legs and the bun feet glued on. Ogee-shaped beech blocks were fitted to the corners of all the chairs. These have to be made carefully to exactly fit the angle between the rails. Holes are drilled but the screws are only fitted after the blocks have been glued, clamped and the glue set.

The new stiles were stained with a solution of bichromate of potash; this reacts with the tannin in the oak to give an even, dark colour that goes quite deep into the wood. When dry, they were lightly sanded with some well-used 240 grit abrasive. A thick wash of Van Dyke crystals paste was then applied to the new parts; this is wiped over with a damp cloth to remove some of the Van Dyke from the high spots, leaving more in the crevices; this imitates the build of dirt in the original parts. When dry, several coats of shellac were applied and the high shine was cut back. The rest of the chair parts were cleaned, then waxed and buffed up.

You can find out more about Richard and the work he does by visiting his website: www.richardcooperfurniture.co.uk. F&C

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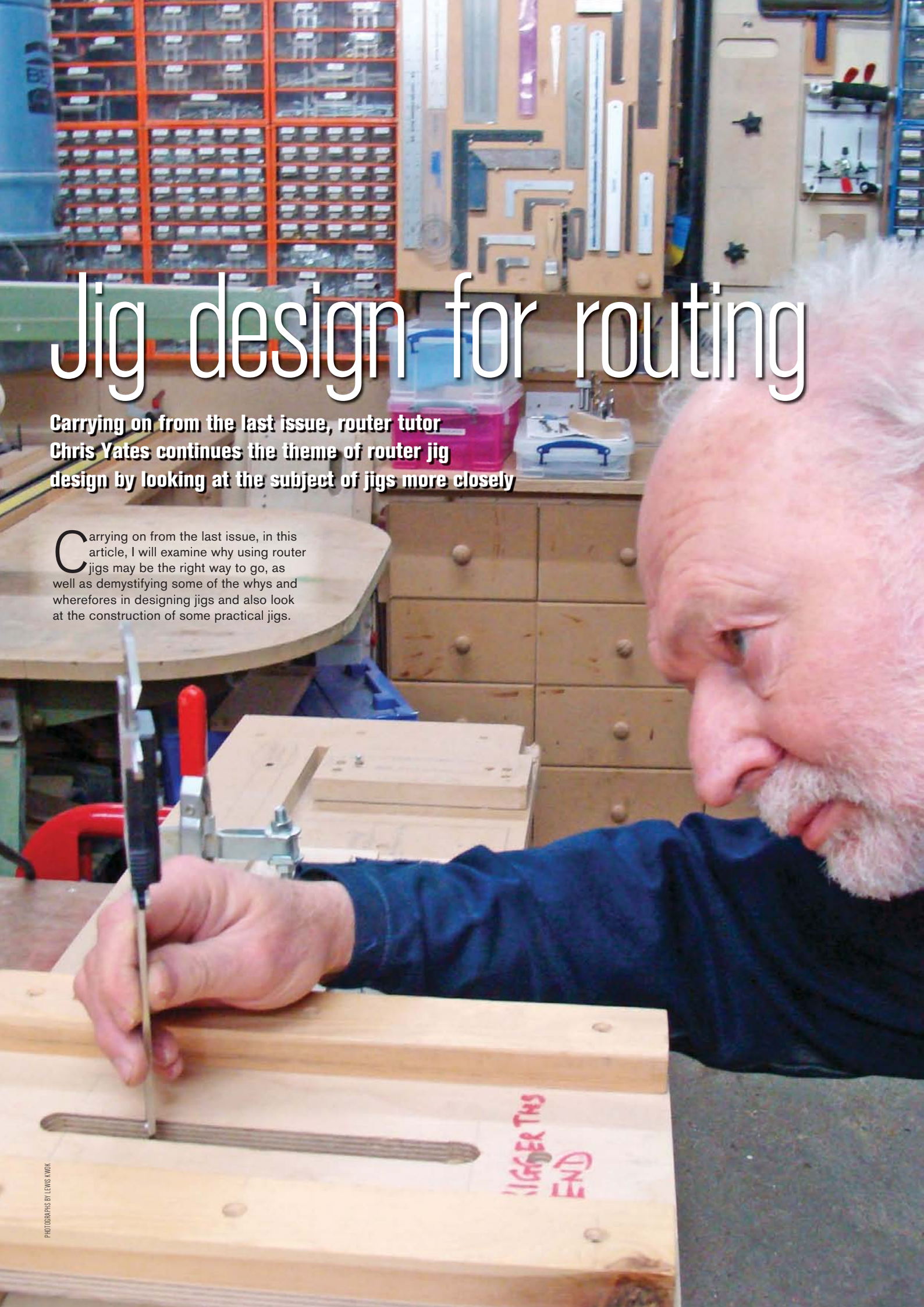
Jig design for routing

Carrying on from the last issue, router tutor Chris Yates continues the theme of router jig design by looking at the subject of jigs more closely

Carrying on from the last issue, in this article, I will examine why using router jigs may be the right way to go, as well as demystifying some of the whys and wherefores in designing jigs and also look at the construction of some practical jigs.



PHOTOGRAPHS BY LEWIS KNOX

Materials for jigs

Many jigs can be assembled from oddments of wood in the workshop. For jigs that will only be used a few times, then what is readily available will probably influence your choice as much as the task to be performed. For example, if you need simple end stops, then any material with a square edge that can be clamped to the bench or router table as appropriate will do. However, if you expect the jig to have relatively extensive use, or it is likely to take more than a few minutes to assemble, then it is worth choosing the materials more thoughtfully.

Many jigs will lend themselves to using sheet materials, the most common of which will be ply and MDF and each of these has its uses. MDF is generally easy to cut and form, even to more complex shapes. It can be finished to a smooth edge quite quickly and is cheap; however, it doesn't wear as well as plywood. Therefore, I tend to use MDF to make the master jig and only use it to cut the working jig from ply; this achieves the best of both worlds. Further, if you adopt this approach, the MDF master jig can probably be made from quite thin stock – say 6mm or 9mm thick – while the working jig can be made from more substantial ply, perhaps 12mm or 18mm. This will probably make setting router cutter depth simpler, as well as providing a larger wearing surface, helping to guard against inadvertent mistakes.

Jigs will often have a base on which the workpiece can be clamped, with the jig proper fixed above it. In such jigs, I like to use a relatively substantial MDF base – perhaps 18mm thick – and extend it beyond the edges of the jig itself. This facilitates clamping of the jig to a workbench without the clamps getting in the way of routing operations. It also offers a more secure fixing for any clamps that need to be screwed to the jig – more on this below.

Other sheet material that can be useful is clear acrylic or Perspex. I get mine from the waste skip outside my local plastics supplier – with their agreement. Such suppliers tend to generate waste in quite large pieces and most of my needs are smaller than A4-size and they are happy for me to have an occasional rummage. More specialist materials, such as Tufnol and other dense plastics, may be appropriate on occasion but they tend to be relatively costly and not available so conveniently. I don't think I have ever needed to use these for a shop-made routing jig, although I have used Tufnol for a variety of tasks in another hobby – railway modelling. As noted in an earlier article, many manufactured jigs are made from such materials because of their dimensional stability and hard wearing properties.

A mixture of threaded inserts with or without flanges and, on the left, rivet nuts; these are intended for insertion in sheet metal with a heavy-duty hand riveter, but which can also be used in wood. All the types shown have M6 threads

Another type of threaded fixing, this time for plastic and Tufnol

Jig hardware

At their simplest, jig fixings are those found in every woodworker's workshop, comprising a range of screws, pins and glue. To these I would add staples – I use a small electric stapler to fix thin components in place while the glue dries. This can be quite a time saver, as when I make a jig I usually want to use it straightaway. Not essential, but if you have one on hand, it can be useful as it is generally quicker than using screws.

I also use bolts – strictly machine screws, which are threaded for the full length of the shank – if I need to clamp either a workpiece or a jig very tightly or more than a few times and need to be able to pass the router over the fixing, precluding the use of any other form of clamping. You can either counterbore the top layer of the jig to get the hex or round-head bolt head below the top surface, or use countersunk bolts. In the latter case, if I expect to fix the bolt in place more than just a few times, I use a screw cup countersunk in the top surface, as otherwise the top layer of the jig will be worn away quite quickly. All bolts need to be screwed into some form of nut and the ones I use most often are pronged, or spigot, nuts. See the photo for examples of all this hardware. If you are fortunate to live near a fasteners and fixings supplier, they will probably stock most of these items, otherwise they are all available from web-shops or eBay.

Suitable bolts come in a variety of head patterns. I try to use hex or hex – Allen – socket as they are easier to tighten and loosen repeatedly, especially when using a cordless screwdriver or drill with appropriate bits. One last point: select high tensile bolts if you have an option, as they wear better and tend not to damage the nuts when they are tightened.

You will probably build up an assortment of miscellaneous hardware, such as T-slot bolts, handwheels and other fixings. Again, these are available in sets at a reasonable price from the major tool suppliers, but beware of the thread patterns enclosed. Many will use UNC threads, betraying their US origin, although some do have metric patterns. This may not matter for occasional use, but if you make jigs regularly, you will need to be aware of the thread patterns if you need to make or modify the fixings. For example, by substituting bolts of a different length. I'm afraid I gave up on the unequal struggle to standardise and have a supply of fittings in both UNC and metric!

Typical contents of jig kits available from the major tool retailers

These handwheels are all M6 and are widely available, as well as being included in some jig hardware kits

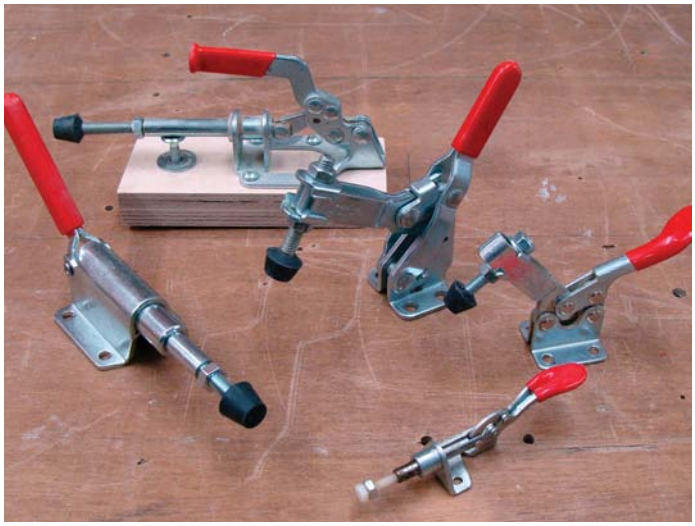
5/16in UNC versions of captive nuts for wood and plastic

Toggle clamps

If you make jigs, you will quickly come to appreciate the convenience of toggle clamps for holding the workpiece. They come in a variety of configurations, mainly 'pull-push' or hold-down, with a further option of the position of the handle in the clamped position. These days they are readily available from the usual major tool shops, as well as being available from web-shops. Two big name manufacturers are Good Hand and Bessey, the former often apparently rebadged by other suppliers. All appear to be fine for our purposes. See the photo for a selection of clamps I use regularly.

Some manufactured jigs come with toggle clamps fitted – for example, the sledge illustrated in the last issue. They are usually fixed with bolts so can be readily removed for use on other jigs and fixtures when not required on the original jig. If you have a jig where you need to use toggle clamps, they can be fixed with round head screws, provided the base is thick enough. Alternatively, you can fix them with bolts into spigot nuts fitted on the underside of the jig in suitable positions, although I usually manage with round head screws for most purposes.

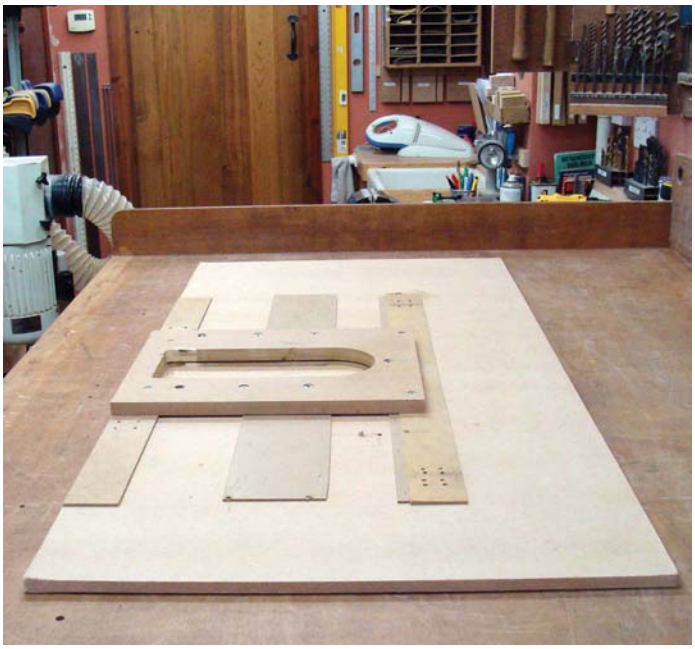
A quality ready-made sledge that came complete with three toggle clamps



A small selection of the clamps I use all the time. The larger push-pull clamp is mounted on a spacer block to ensure that it bears on the mid-point of the workpiece side

I made this jig when I offered to make a framework for a friend who was modelling Ledbury viaduct at 1:72 scale. The framework was in 2mm MDF and I found it was necessary to securely clamp the piers of the viaduct, as the material was not stiff enough to avoid being pulled into the router cutter. My friend is modelling 28 of the 31 prototype piers and I needed to cut, therefore, 56 arches in groups of four. So, the clamping bolts needed to be well seated in screw cups to avoid destroying the jig during use. It worked in the end!

An assortment of M6 clamping fixtures and tightening tools referred to in the text. Using the bits with a torque controlled cordless screwdriver or drill can save a great deal of wear and tear on the arm muscles!

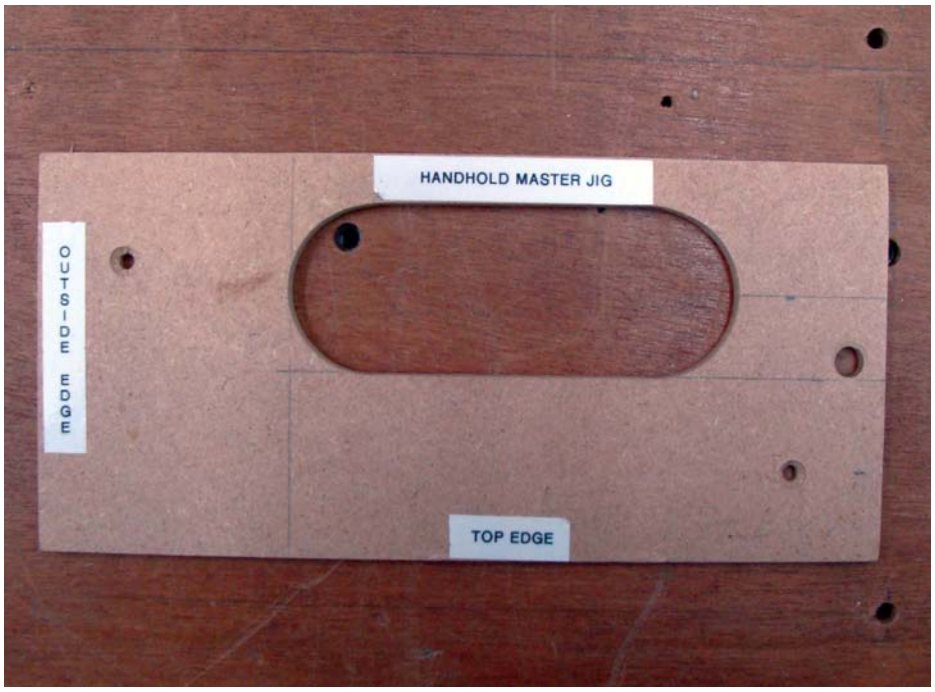


This is the same jig used for the model of Ledbury viaduct, but here shows the use of a sizeable baseboard on which to mount the jig. This was necessary in this case because the routed sections of the viaduct were quite delicate once machined and needed to be supported as they moved through the jig for each successive gap between adjacent piers to be routed out. If you look carefully, you can see a register pin to the right of the main jig, used to locate the MDF sheet for each successive routing operation

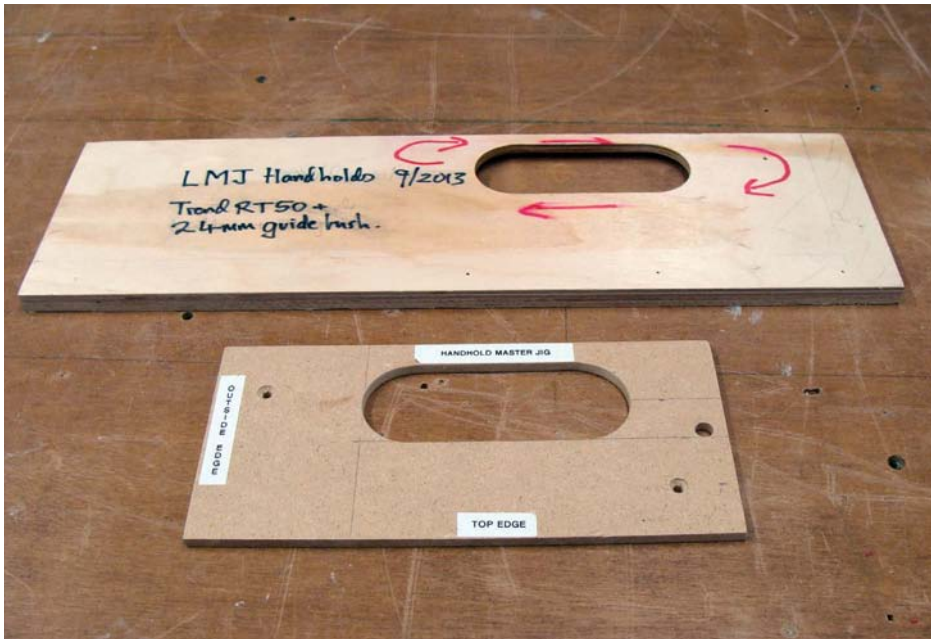
Master jigs

They won't necessarily help you to control the universe, but they might save you a good deal of time and frustration. Taking, for example, the handhold jig mentioned and illustrated below, it can take an appreciable amount of time to make the handhold opening to exactly the right size and to finish the inside edge smoothly. However, it will take only a microsecond to spoil it if you accidentally nick the edge with a router with the bit still in the plunge position – it happens! Therefore where the jig, or jig component if it is a part of a more complex jig, requires significant effort to make it in the first place, I tend to use the finished jig to make replicas of itself and then put the original – master – jig safely to one side just in case I need it in future. I then use the replica jigs without the same concern about accidental damage causing a lot of abortive work. Bear in mind that you can still damage the original, so take extra care when cutting the replicas, or the exercise will prove futile. Clearly this approach is much more relevant to shaped pieces, as a straight edge can usually be readily replaced if damaged.

The same approach can also be applied to bought-in jigs, where damage can prove very expensive and/or difficult to repair although any minor damage can usually be rectified by using a two-part filler.



A master jig will benefit from as much information as possible relating to its orientation as well as its intended use

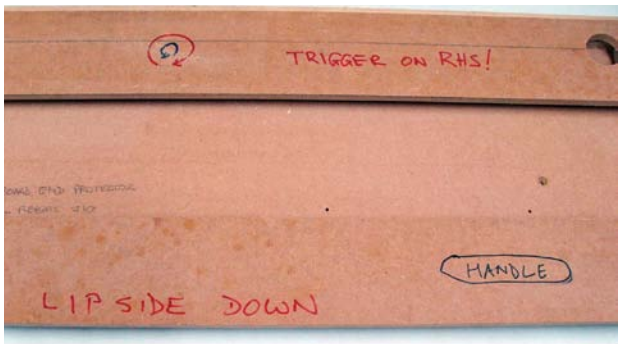


My most used master jig, together with a copy jig used for a particular project. The size of handhold is easily adjusted by varying the sizes of guidebushes and router cutters. I only ever use the master jig to make daughter jigs, which I then use on projects. Note that the master jig is in thin MDF, while the daughter jig is made in more serviceable ply

Jig information

To finish this part, a few thoughts about shop-made jigs. When you have made your jig, and it is working successfully, make some notes about what it is used for and the sizes of cutters, guidebushes, etc. used with it, as well as the corresponding finished sizes of workpieces. I find that I accumulate jigs fully expecting to use them again in the near future, but find that by the time I actually go to use them again, I can't remember these details. I find the easiest way to record this information is to write on the jig itself in pencil, but any method will do.

The other thing I do when making jigs is mark on them the direction of movement of the router. It is surprisingly easy to move the router in the wrong direction and spoil the workpiece or the jig. I usually mark the jigs with coloured felt-tip pen showing the direction of movement. Similarly, if using the router base to position a router in a jig, mark the alignment of the router, e.g. 'trigger to RHS', as few router bases are actually symmetrical.

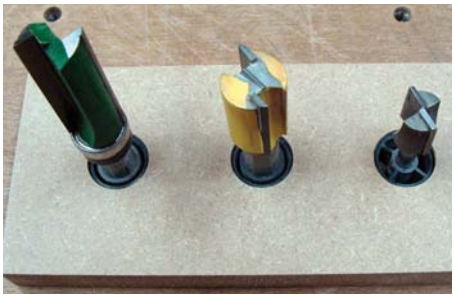


Record the orientation of the router as it is used in the jig if the machine base is used as a reference edge

Some bits of jiggery

When making an edge guide for a router to follow, remember that it will try to follow the edge very closely – imperfections included. Actually, if you are guiding the router using the edge of the router base, it will follow any high points on the guiding edge, so will tend to give a smoother cut line, by ironing-out any fractionally low spots. Similarly, if using a router cutter with a bearing, or a guidebush fitted to the router, against a guiding edge, it will tend to smooth out any dips with a nominal radius less than that of the bearing or guidebush, although if the opposite is true, they will follow the edge very closely and you will get an unintentionally slightly scalloped decorated finished edge on the workpiece!

Views will vary on whether or not to use the plunge lock on your router – it is really a matter of personal choice. However, bear in mind that if you are using a bearing-guided cutter, letting the plunge rise will probably bring the spinning cutter into contact with the jig edge and damage the jig as well as the workpiece; this can also arise if the plunge lock works loose or releases unexpectedly, so you need to keep an eye on this. Therefore, I tend to use the plunge lock if using top-mounted bearing-guided cutters, but may not always do so if using the router base or guidebush to guide the router. Similar considerations apply to a bottom-mounted bearing guided cutter, if there is a gap between the template and the workpiece.



The cutter shown on the left does not have a plunge capability, but the two to the right can both plunge and cut on their sides

Principle

Setting the depth of cut

Using the plunge depth stops on the router will give you accurate depth control. This is fine until you change the position of the cutter in the collet, perhaps after cleaning it midway through a long job. In this case, it is useful to be able to reset the depth of cut again. I do this by routing a plunge hole in a corner of the jig; however, this will not give precisely the same depth repeatedly, as the end of the router cutter is sharp and hard and the jig is relatively soft. Therefore, once the depth has been set and the depth gauge hole cut, rout it a tad deeper by using a washer that will just fit in the hole. Set the plunge depth to be deeper by the thickness of the washer, before placing the washer in the hole and resetting the depth gauge; this will ensure consistent plunge depth.

For routing through the thickness of the workpiece, the best approach is to use a spelch board under the workpiece – usually forming the base of the jig itself. Then, take light cuts to remove some of the surface where the cuts will be made using the jig as a guide and possibly a larger diameter end-cutting router cutter, then setting the depth of plunge becomes simple.

Stability

To ensure maximum stability, always check that the jig is firmly mounted on a bench or similar workplace and preferably firmly fixed in position.

Select the correct router cutter

If you are going to plunge the router cutter through the workpiece, make sure that it has a bottom-cutting edge. It is possible to ramp plunge with a cutter not designed for plunge cutting, but this is best avoided if possible, perhaps by drilling a clearance hole to the waste side of the cut line in the workpiece before placing the workpiece in the jig.

Manage the waste

Be prepared to have to clear waste from the jig, possibly partway through machining each workpiece if necessary. This is more likely to be needed if you have not already removed waste close to the desired cut line, resulting in heavy cuts. If you like the smell of smouldering wood in your workshop, then ignore this paragraph!

Also, if you will actually cut around an 'island' of waste, then you might want to consider how to avoid this. I never like leaving a loose piece of material near a spinning cutter, as it is too easy to make contact with it when removing the router, which often yields unpredictable results. At the very least, remove an area of waste wood away from the cut edge so that you can move the router a little way from the finished cut before releasing the plunge and removing the router, without the spinning cutter coming into contact with the freestanding waste.

Test the jig

As always, try some test cuts before starting on the workpiece. Use these test cuts to rehearse your movements, checking that router cable and dust extraction pipe don't snag or cause the router to tip and that you can see what you are doing and keep your balance and stay in control of the router at all times.

Other bits and bobs

There is a place for double-sided tape in holding workpieces in position, although I try to avoid its use because of the problems of removing the workpiece after machining – it can be too successful on occasions! One alternative is to use abrasive paper glued to the jig with the abrasive side in contact with the workpiece, although you will usually also need to provide clamping pressure to the workpiece to stop any movement. In such cases, simple shop-made cams or blocks screwed to the jig may prove adequate.

NEXT MONTH

In the next article in this series, we will finally get to make a couple of useful jigs F&C

NEXT MONTH in

Furniture &cabinetmaking

ISSUE 231
ON SALE
16 APRIL

Workshop tech

Build a benchtop bench for better control

PHOTOGRAPH COURTESY OF THE VAN DYKE WORKSHOP

Projects
Build your own heirloom spirit level

Restoration
18th-century chest on stand

The saw doctor will see you now
Q&A with Mark Harrell

Finishing tech
Milk paints and hard wax

PHOTOGRAPHS BY OLIVER WATERS

The Apprentice's notebook

In the first of a two-part article looking at creating cutting edges, Waters & Acland student Jim Cooper tackles the basics

Our students are tantalisingly close to making their first shavings. It's a feeling I remember well from my training; the smell of the workshop and the joy of seeing that paper thin ribbon of wood curl from the blade. For now though, there's just one more bit of metalwork to complete before the woodwork begins and the realisation that I have mastered a skill that will last a lifetime. Having dealt with flattening the sole of the plane and the back of the blade in the previous articles, we're going to hand you over to our apprentice Jim Cooper as he retraces his steps to create the perfect cutting bevels.

Jim's notes

Once the back of the blade is flat, the following three tasks need to be done to complete the sharpening process: the grinding of the primary bevel, the grinding of the secondary bevel and the removal of the burr created during the sharpening process. This month, we focus on the primary bevel. For standard bench planes, we use a 25° primary bevel and a 31.5° secondary bevel.

How do we grind the primary bevel?

We regrind the primary bevel as part of the initial preparation of each blade; this is to ensure that the cutting edge is completely flat – in particular ensuring that there is no concavity – and allowing the introduction of a controlled convex curvature at the end of the grinding process. Thereafter, the primary bevel needs to be reground periodically, when the secondary bevel has become too large to allow efficient resharpening or the cutting edge suffers significant damage.

Hand plane blades are normally supplied with a 25° pre-ground primary bevel and the description below assumes that this is the case. It also assumes that the cutting edge is at right angles to the sides of the blade. Before grinding commences, the blade should be visually inspected to ensure that the existing primary bevel is indeed 25° and that the cutting edge is indeed at right angles to the sides of the blade. If the blade is supplied with a primary bevel other than 25° or the cutting edge is not at right angles to the sides of the blade, different remedial techniques are required, which fall outside the scope of this article.

Checking the existing angle of the primary bevel

Checking for square

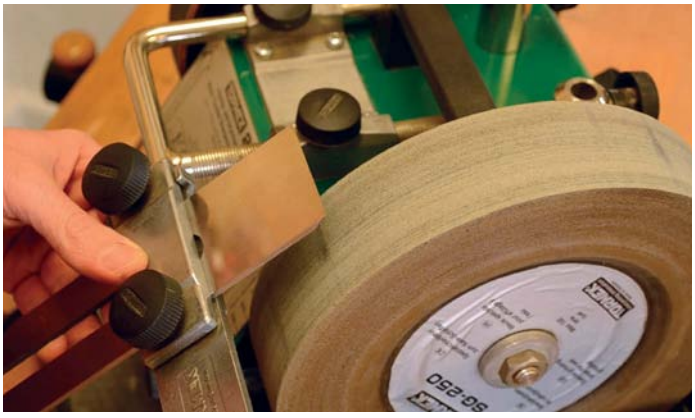
Using water-cooled grinding machines

Grinding of the primary bevel is done using a water-cooled grinding machine. The one we use at Waters & Acland is the Tormek 2000. The reason for using a water-cooled grinding system is that the blade remains cool enough throughout the grinding process that there is no risk of altering the properties of the steel. We find it easier to operate the Tormek with the machine set up so that the grinding wheel rotates away from the blade. This is also a safer way of operating the machine as it eliminates the risk of the blade tip digging into the grinding wheel. The TT-50 Truing Tool should be used regularly to expose fresh abrasive, as this improves the speed of the grinding process and if correctly set up will present the edge of the wheel parallel to the tool guide rail. The speed of the grinding process is also improved by using hot water together with a few drops of washing up liquid.

When regrinding the primary bevel at the same bevel angle, position the blade in the tool holder. Visually check the position of the blade relative to the grinding wheel. The grinding wheel should contact the blade in the middle of the pre-ground primary bevel and the bevel should be in contact with the grinding wheel across the width of the blade. Contact left to right across the whole width of the blade will ensure that the blade will be ground at the same angle as before relative to the sides of the blade. Positioning the blade so that it contacts the grinding wheel in the middle of the primary bevel will ensure that the bevel will be reground at the same angle as before.

After this initial set up, the existing primary bevel should be covered with felt-tip pen ink, the blade then moved from left to right across the stone a few times with light pressure, or the grinder run for a few seconds. Looking at the pattern produced will allow you to reposition the blade until the blade is correctly positioned with the centre of the bevel in contact with the grinding wheel across the whole width of the blade.

When regrinding the primary bevel, you should keep a light even pressure over the whole of the width of the blade and the blade should be moved slowly across the the grinding wheel. When grinding narrower blades, the full width of the cutting edge should at all times remain in contact with the grinding wheel. For wider blades, the sides of the blade should never move past the middle of the grinding stone. Progress should be monitored regularly to determine how much of the primary bevel has been reground and to monitor the flatness of the cutting edge. It is particularly important to ensure that no concavity is introduced into the cutting edge during the regrind. This process should be continued until there is a flat cutting edge with freshly ground surface over the whole of the primary bevel.



The Tormek is set up with the wheel rotating away from the blade

The TT50 Truing Tool vastly improves grinding speeds and accuracy

Accurate positioning of the primary bevel against the wheel

Felt-tip pen is used to aid inspection of the blade positioning

The blade is moved slowly across the wheel

The ink is removed evenly across the primary bevel

Wide blades shouldn't move past the middle of the wheel

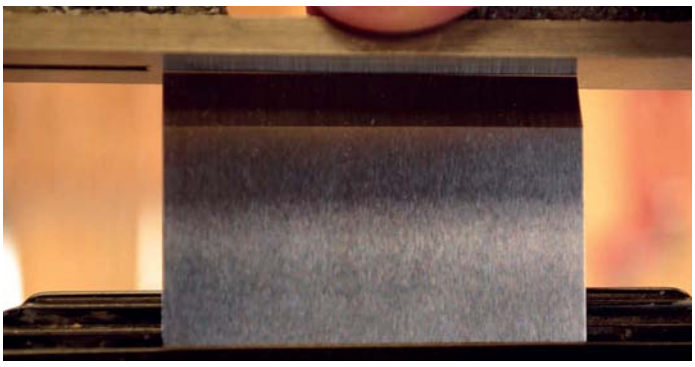
We first aim for flatness across the cutting edge

A perfectly flat primary bevel

Slight curvature on the cutting edge

For a number of reasons, a slight curvature is introduced into the cutting edge of bench plane blades. This curvature should only be very slight and should be over the whole of the cutting edge, not just at the ends. The curvature should be determined using a reference straightedge. The gap at each end of the blade should be around 0.1mm to 0.2mm – typically 2-4 shavings. Generally, blades are not supplied with a curvature of this nature and this is one of the main reasons why we regrind the primary bevel as part of the initial preparation of the blade.

The required curvature of the cutting edge should be introduced at the end of the bevel grinding process. This is done by applying, in turn, additional offset pressure near to each side of the blade. If the blade is wider than the width of the grinding wheel, then move the blade so the side of the blade is within the width of the grinding wheel. Apply offset pressure to each side of the blade in five second bursts; this should be done gently and the effect on blade curvature checked regularly using a reference straightedge to ensure that the desired curvature is produced. This process should be repeated until the blade has a symmetrical shape with the correct amount of curvature.



A controlled, even and gentle curvature across the cutting edge

Offset finger pressure introduces the curvature

Sharpening is a technical business. You can't get away from it; there are loads of different systems on the market: every furniture school, every workshop and every cabinetmaker will have a variation on the sharpening theme. Our system has grown over time. We've learned from our own experiences in the pro workshop and from the journeys of our students within the furniture school. The common mistakes, the frustrations, the pleasure taken from getting it just right have all led to a system that is both accurate and repeatable while keeping a keen eye on the end goal. A razor-sharp blade with, in the case of bench planes, a slight curvature across the width that gives the cabinetmaker control; this allows the user to tackle problematic grain and allows a level of finesse that defines the difference between good work and the crisp, almost perfect work, that we aim for here in both our commercial workshop and the furniture school.

NEXT MONTH...

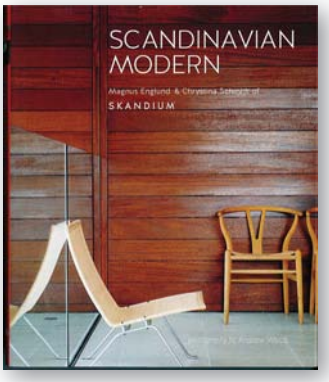
In the second part of this article, we tackle the all important secondary bevel – the scary sharp bit!

To see the full video sequence of creating cutting edges, plus many other instructional videos as they appear in the series, visit the Waters & Acland YouTube channel: www.youtube.com/user/watersandacland. F&C

Workshop library

Barrie Hope reviews Hendrik Varju's *Making Drawers* DVD, Mark Langston looks at *Make a Wooden Smoothing Plane with Scott Meek* while Derek Jones reviews a book on Nordic design styles. We also have a great book offer

BOOKS



Scandinavian Modern

by Magnus Englund & Chrystina Schmidt

For several decades, Scandinavian style has had an influence on the way we deck out our homes. Whether it's a conscious decision to replicate the style with any authenticity is largely irrelevant. What we get from the pared down informal simplicity is the ultimate non-style identity. Good, honest materials speak volumes when used alongside a palette of complementary colours. This approach has given us some of the most influential and iconic furniture designs of the last century. This book by the founders of Skandium, a fashionable retail outlet on two continents, seeks to promote a style that came to the fore between the two world wars, reaching its height of popularity in the 1950s.

Also collectively known as the Nordic region, Denmark, Finland, Iceland, Norway and Sweden was, until the end of the 19th century, something of an agricultural backwater. Eeking a living from the land was tough. Homes and possessions were simple but out of necessity nearly always obsessively functional. Browsing the pages of *Scandinavian Modern* you begin to notice that not only are the pieces easy on the eye but they are easy on the maker. There are pieces of furniture in this book that you could make, and should make, if only to learn from them. By the way, this is not a 'how to' book; it's partly coffee-table book and partly sales brochure but oddly none-the-worse for being either.

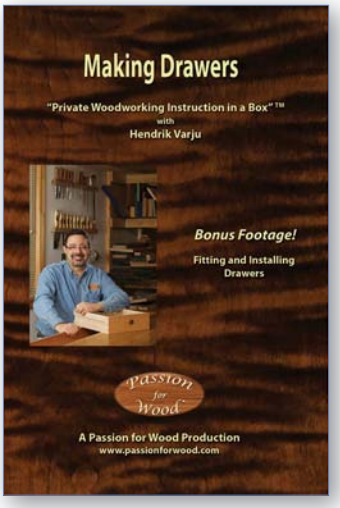
I used to work with an 'interior designer' who always specified 'blonde' wood. She'd do well to read *Scandinavian Modern* but I suspect like the Inuits and their 50 words for snow, she'd probably end up with just another 50 words for 'blonde' – and before you ask, yes, she was.

I recommend you seek a copy not just so you can pinch ideas but to understand in a nutshell what the Nordic style is all about. True to form, Magnus Englund and Chrystina Schmidt have put it beautifully.

Inside the home of Poul and Hanne Kjærholm

Published by
Ryland Peters & Small
£19.99 144 pages
ISBN: 9781841724119

DVDs



Making Drawers

by Hendrik Varju

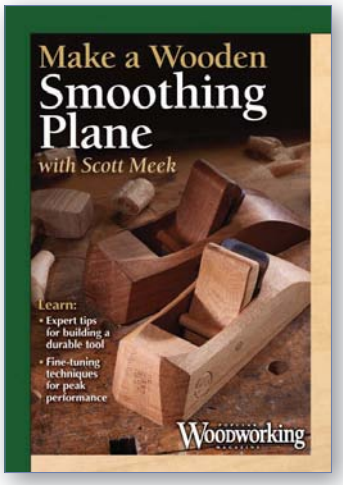
With five DVDs containing over 10 hours of tuition, this excellent course is brought to you by Hendrik Varju who provides admirably concise, highly competent, no-nonsense instruction. The course is well filmed and edited and Hendrik speaks clearly without irritating hesitations or unnecessary repetitions. He teaches exactly how to build drawers using his own system and the student needs the use of a full range of workshop machinery. This course is therefore more for machine rather than hand tool enthusiasts.

The introduction covers two main types of drawer slide: the modern metal ball-bearing system and simple wooden rails. Hendrik shows how to build true-front drawers, by which he means those without a false front added. All joints consist of rebates or dados reinforced with dowels – there is not a dovetail in sight. Wooden rails or metal slides run in rebates in the rather thick 20mm drawer sides. He uses solid timber, edge-jointed where necessary for all parts except for the drawer bottoms where plywood is sometimes used. The emphasis is on strength and simplicity.

The design process is clearly demonstrated using large sketch drawings with imperial dimensions shown throughout. These are utilised during the building process, providing clearly detailed plans of an informal type. From these drawings a cutting list is prepared and there is a full description of how each component is detailed, allowing for yet unknown dimensions and thicknesses. Hendrik is experienced in teaching seminars and has developed an efficient build system. He admits that when he makes drawers he follows his own seminar notes for the order of operations. This is reassuring knowledge for the DVD student.

Detailed build instructions follow and these include an impressive section on the setting up and use of a dado cutter on the tablesaw. He prefers a dado cutter to a router as it can cut the rebate in one go. Setting up the Freud stacked dado set and the use of a sacrificial fence is carefully demonstrated on the DVD and a healthy emphasis on safety procedures is always present. The course continues with glue-up techniques and finishing. The last two chapters cover the installation of drawer runners and slides. This excellent course is good value for money and can be thoroughly recommended.

Published by Passion for Wood $94.95 (£63) (plus shipping & taxes)
10 hours, 28 minutes over five DVDs
ISBN: 9780988128040



Make a Wooden Smoothing Plane

by Scott Meek

This informative and easy to follow instructional DVD from Scott Meek is an excellent resource for woodworkers interested in trying their hand at building their own wooden plane. Available as a DVD or digital download, this release clocks in at two and half hours. It is divided into 12 manageable sections, covering all the essentials needed to construct a laminated plane in the style popularised by the legendary James Krenov.

Scott is an amazing craftsman and his planes are things of beauty. Here, he generously shares his process for constructing a wooden smoother in a clear and concise fashion. He demonstrates the entire process from the point of having milled the required laminates to the application of finish, including how to tune, setup and maintain your plane.

The presentation style is no nonsense, straight to camera with each step demonstrated by Scott at his bench. Particularly helpful is the range of camera angles, including those from above the working side of his bench, giving the viewer the perspective they will have when transferring the process into the reality of their workshop. It's clear that effort and thought went into these multiple angles and it is definitely worthwhile; there was no point at which the reviewer was left unclear about what to do next.

All processes are carried out using standard workshop equipment that most woodworkers will likely have access to and it is good to see a combination of both hand and power tools. When Scott occasionally uses less common tools, he helpfully offers up an alternative approach, which makes this DVD easily accessible.

Also included in the package are several drawings showing bed angles and other useful measurements, and – at least in the digital download – a short DVD in which Scott gives a brief overview of some of the various planes he commonly produces, from a small block plane up to a 710mm jointer.

All in all, this is an excellent 'how to' DVD that will provide everything needed to get started in plane making with the minimum of fuss. And, as Scott says, the great thing about making a wooden plane is once you've made one, you can make another and another – and you get quicker each time. It might be time for a new shelf in the workshop!

Published by Popular Woodworking magazine
$24.99 (£16.26)
149 minutes
ISBN: 9781440335112

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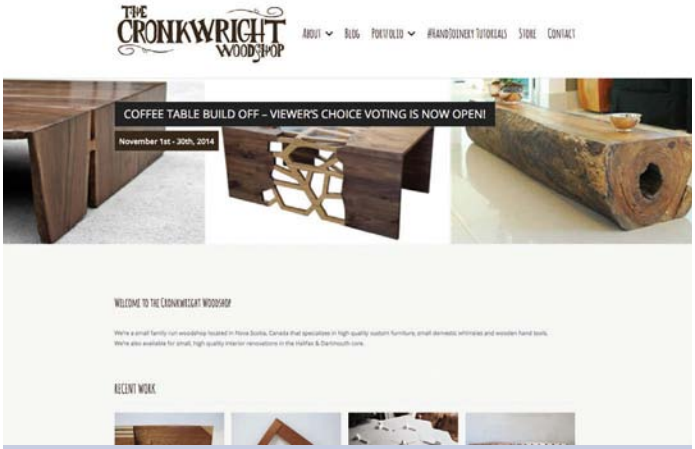
Website of the month

The Cronkwright Woodshop



The Cronkwright Woodshop website radiates fun, energy and enthusiasm for woodworking. The family-run business is based in Dartmouth, Nova Scotia and the website run by designer craftsman Neil Cronk and 'web guru and business overlord', Erynn Ahern.

The picture quality throughout the website is great, with a slideshow linking to their online store on the homepage and exhibiting their work. From the homepage, you can get to their 'about' page, blog, portfolio, a page called '#HandJoinery tutorials', their store and contact page. As the couple mention, The Cronkwright Woodshop aims to build quality furniture, which is designed to last for decades.

The website blog is where you'll find the more up-to-date information, as well as a page on upcoming events. Within their portfolio page, the most recent work of The Cronkwright Woodshop can be seen, along with 'furniture & domestic whimsies', 'woodworking tools', 'custom pieces & personal projects' and 'interior spaces'.

The only area of the website I found to be a little more complex was the ''#HandJoinery Tutorials'. The images are brilliant quality, but – and this is mentioned on the page – they're quite slow to load due to their size. The main problem I encountered in this section of the website was the slideshow format of the tutorials, when – on the main tutorial page – the changeover time of the images and steps are set to change fairly quickly. This, however, can be solved by clicking on the slideshow image. This will bring the step text/photograph into the foreground of the page and at the bottom corner sit buttons to enable you to go through the steps at your own pace.

The Cronkwright Woodshop's online store is easy-to-use, with picture reference for the tools available. The store, as well as tools, occasionally have limited-edition small household items. A good amount of photographs are supplied with each item for sale, so you can see multiple views of the tool you're interested in, alongside a detailed description of the piece. These handmade tools are available and ready to ship.

Should you have any questions for Neil or Erynn, they are easily contactable via the website. They also offer small interior projects for both the home and office space or small business, in their local area only.

Overall, The Cronkwright Woodshop is a fun website, full of tips, ideas, tools and tutorials. This is definitely worth a visit!

Details

Web: www.cronkwrightwoodshop.com

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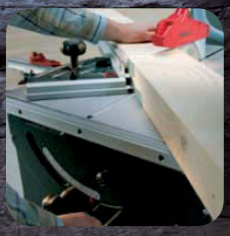

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UNDER THE HAMMER:

Fine English Furniture and Works of Art sale

Bonhams gives *F&C* a preview of their upcoming sale, which includes examples of cabinetwork by leading furniture makers from the late 17th century to the late 19th century

The Fine English Furniture and Works of Art auctions at Bonhams, which take place this month, features examples of cabinetwork by leading furniture makers from the late 17th century to the late 19th century. Previous sales have included furniture by such distinguished makers as Chippendale, Ince and Mayhew, William and John Linnell, Seddons, Gillows and George Bullock as well as many other eminent makers. Rare colonial pieces are also occasionally included in the sales, such as Anglo-Indian and Chinese export furniture. Besides furniture, Bonhams' auctions also encompass works of art together with tea caddies, candlesticks, desk stands, fire grates, buckets and a variety of boxes.

Selected highlights

A small late George III satinwood, rosewood and tulipwood crossbanded and painted Carlton House desk

Inlaid with boxwood (*Buxus sempervirens*) and ebonised lines, the curved and stepped top with pierced gilt brass gallery are featured above four short drawers flanked by a pair of curved doors painted with a beaded oval, which is similarly flanked by two smaller side drawers. One of the drawers is fitted for stationery and this is further flanked by two drawers to the front, above an inset white marble top and three frieze drawers. The reverse is painted with strings of beads on turned tapering legs headed by fluting and is displayed on brass cappings and castors. This piece measures 1,070mm wide × 640mm deep × 990mm high and is expected to sell for somewhere in the region of £40,000-£60,000.

A small late George III Carlton House desk, 1,070mm wide × 640mm deep × 990mm high

Back view of the House desk

PHOTOGRAPHS COURTESY OF BONHAMS

A George III satinwood and sycamore marquetry secretaire bookcase in the manner of Mayhew and Ince

The gonçalo alves (*Astronium fraxinifolium*) moulded cornice on this secretaire bookcase is placed above a 'blind-fluted' frieze and a pair of astragal glazed doors, which enclose three adjustable shelves. The lower part features a conforming gonçalo alves moulded edge above a writing drawer, which is inlaid with twin marquetry panels of scrolling foliage centred by paterae and revealing small drawers and pigeonholes. Below is a pair of cupboard doors each inlaid with a laurel-entwined swan-headed lyre with central engraved ivory Apollo mask medallions, which encloses two banks of four graduated mahogany (*Khaya ivorensis*) drawers. The sides feature oval and rectangular sabicu reserve panels and the piece is inlaid throughout with stringing and tulipwood (*Liriodendron tulipifera*) bandings. The bookcase measures 1,260mm wide × 530mm deep × 2,450mm high and is expected to sell for somewhere in the region of £20,000-£30,000.

George III secretaire bookcase in the manner of Mayhew and Ince, 1,260mm wide × 530mm deep × 2,450mm high

Detail view of the marquetry motif on the George III secretaire bookcase

A pair of Victorian satinwood, purplewood and sycamore marquetry bonheur du jour

Made in the Louis XV/XVI transitional style, this pair of Victorian satinwood, purplewood (*Peltogyne spp.*) and sycamore (*Acer pseudoplatanus*) marquetry bonheur du jour both feature gilt bronze mounts, which are inlaid with boxwood and ebonised lines. There is also a rectangular brass bound top and pierced three-quarter gallery above a cavetto moulded frieze and riband tied central mount. Above this is a pair of glazed doors enclosing a shelf and the glazed sides are flanked by espagneolette masks with trailing floral mounts to the angles. The lower part features a shaped rectangular top and tooled ox blood leather writing surface above two short drawers flanking a simulated drawer. The pieces feature cabriole legs headed by 'C' scroll and acanthus pierced mounts trailing to sabots. Each measures 1,060mm wide × 590mm deep × 1,540mm high and are expected to raise between £15,000-£20,000.

A pair of Victorian satinwood, purplewood and sycamore marquetry bonheur du jour, 1,060mm wide × 590mm deep × 1,540mm high

Collapsed view of the Victorian centre table, which measures 1,500mm dia. × 720mm high

A Victorian walnut, crossbanded, sycamore, ivory, mother-of-pearl, brass, copper and pewter marquetry centre table

Made in the manner of R.W. Herring & Sons, this centre table features a circular moulded tilt top, which is centred by arabesque and a floral marquetry quartered circular panel, featuring a band of Triton's blowing conch shells between classical flower-filled urns. You can also see scrolling acanthus leaves and flower heads and the base features a beaded shaft on acanthus and 'C' scroll carved cabriole legs. It has scroll and shell carved feet with castors. Stamped under the block and indistinctly under each leg are the initials 'M.A.B'. It measures 1,500mm in diameter × 720mm high and is expected to sell for somewhere in the region of £15,000-£20,000.

This table relates to an early Victorian centre table with brass, pewter, copper, mother-of-pearl and ivory inlay by R.W. Herring & Sons, which was made for the 1851 Exhibition and sold in Bonhams' auction rooms on 12 June, 2013. Unfortunately very little is known of the firm's output as with the exception of the table here, only one other example of furniture bearing this maker's label appears to have been recorded.

A close-up of the Victorian centre table

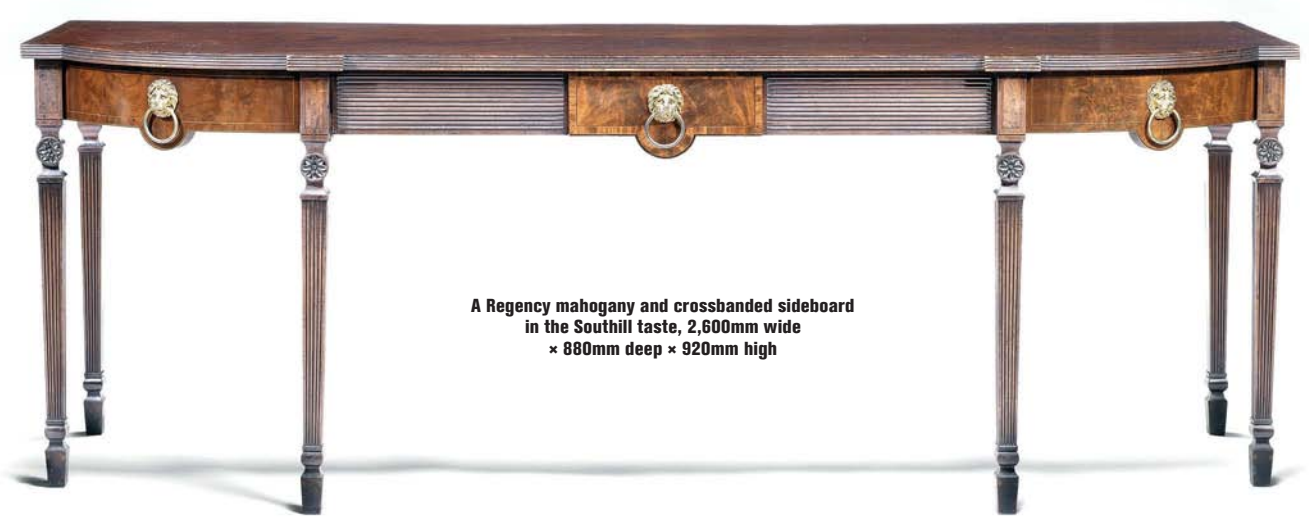
Detail view of the centre table

A Regency mahogany and crossbanded sideboard

Made in the Southill taste, this Regency mahogany and crossbanded sideboard is inlaid with boxwood and ebonised lines and features a shaped rectangular top above a reeded edge. There is a small shaped drawer flanked by a reeded frieze and simulated bowed drawers, all with ring tamed lion mask handles. It features square tapering legs headed by paterae carved roundels on spade feet and measures 2,600mm wide × 880mm deep × 920mm high and is expected to sell for around £10,000-£15,000.

For more information on any of these lots, see www.bonhams.com. *F&C*

Detail view of the sideboard



A Regency mahogany and crossbanded sideboard in the Southill taste, 2,600mm wide × 880mm deep × 920mm high

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